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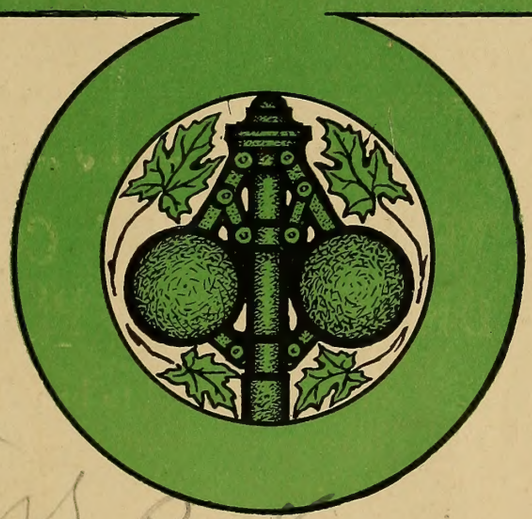

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Vol. XVIII., No. 1 MAY, 1917 — $2.00 per Year

October, 1917

INDUSTRIAL CANADA



Munitions p58

SPEED WITH EFFICIENCY

The most efficient typewriter is "The Underwood." We know because we have tried all other machines and have proved it. This conviction has enabled us to write many advertisements in favor of "The Underwood" during the seven years we have enjoyed the patronage of the United Typewriter Co. We are well equipped to handle a few more accounts. Appointments solicited.

245-307
16:7:30

J. J. GIBBONS, LIMITED

General Advertising Agents

MONTREAL
Cables—Gibjay, Toronto

TORONTO

WINNIPEG
Codes—ABC, 5th Edition

PUBLISHED BY THE CANADIAN MANUFACTURERS ASSOCIATION INCORPORATED.
HEAD OFFICE TORONTO · BRANCH OFFICES, MONTREAL, HAMILTON, WINNIPEG, VANCOUVER, HALIFAX, QUEBEC.

ABRASIVES *Made in Canada*

Users of abrasives of all kinds are invited to investigate our facilities and service. We have installed in Hamilton a plant for the production of

A High-Grade Artificial Corundum

CORALOX

All inquiries will receive our immediate attention

D. A. BREBNER LIMITED

Factory: HAMILTON — Head Office: 58 King St. West, TORONTO

AUTOMOBILE PARTS
DROP FORGINGS



HC
111
I4
V.18
no.1-6

We have erected and are now operating

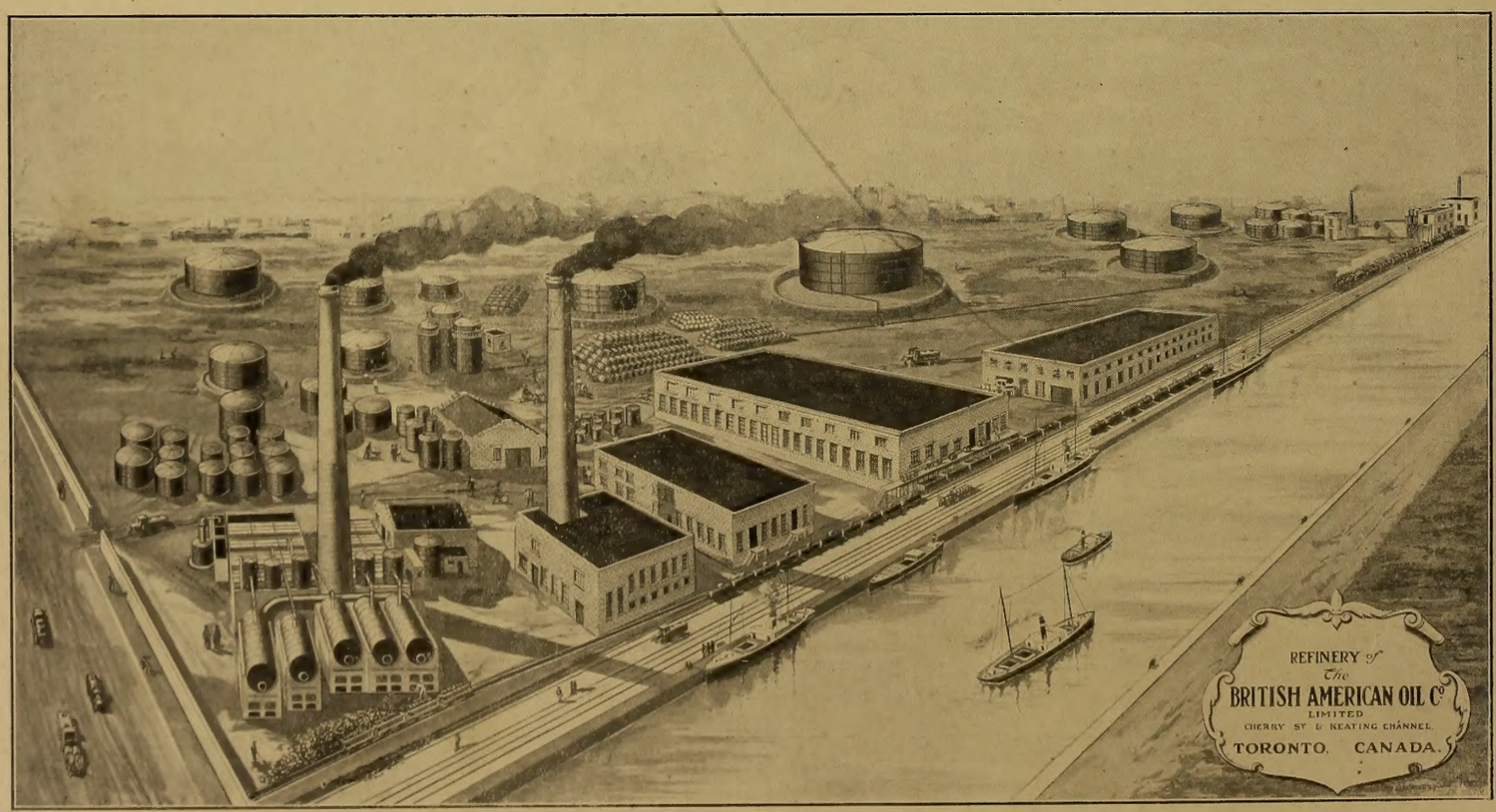
THE LARGEST COMMERCIAL DROP FORGE PLANT IN CANADA

We are equipped to handle large forging contracts.
This expansion also increases our stamping facilities.
We stand by our Motto: Quality and Service.

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GENERAL STAMPINGS

DOMINION FORGE & STAMPING CO., LIMITED
Walkerville - Ontario

THE BRITISH AMERICAN OIL CO., LIMITED



Head Office: ROYAL BANK BUILDING, TORONTO — Branches: Montreal, Ottawa, London, Windsor, Etc.

There is no side-stepping or question with

DART UNION PIPE COUPLINGS

Every time you have a pipe connected with one you have made sure of getting returns to the value of 2 for 1 with every dollar expended. Worth while, isn't it?

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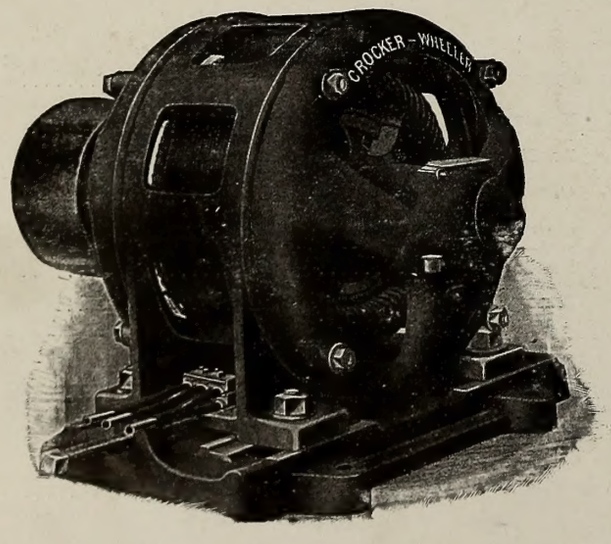
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THE DESIGN OF

CROCKER-WHEELER INDUCTION MOTORS

INCLUDES:

Heavy Shafts

Large Journals

High Power Factor

Excellent Efficiency

They have many other desirable features; Bulletin 155 describes them.

THE CANADIAN CROCKER-WHEELER CO., Limited

MANUFACTURERS AND ELECTRICAL ENGINEERS

Head Office and Works: St. Catharines **District Offices: Montreal, Toronto, Vancouver**

Let Our Service Department Solve Your Inter-Department Communication Problems

In your own line you can give valuable information and advice that will save your customers money. It's part of the service you offer them.

And in our line, we know we can do the same for you.

If your plant is expanding you will have felt the need of a better "line of communication" between department and department.

Let us assist you. Give us an opportunity to show you how an installation of the "All-Canadian" Prestophone automatic telephone system will help you out.

At Your Service Anytime, Anywhere
Write for the Prestophone Particulars

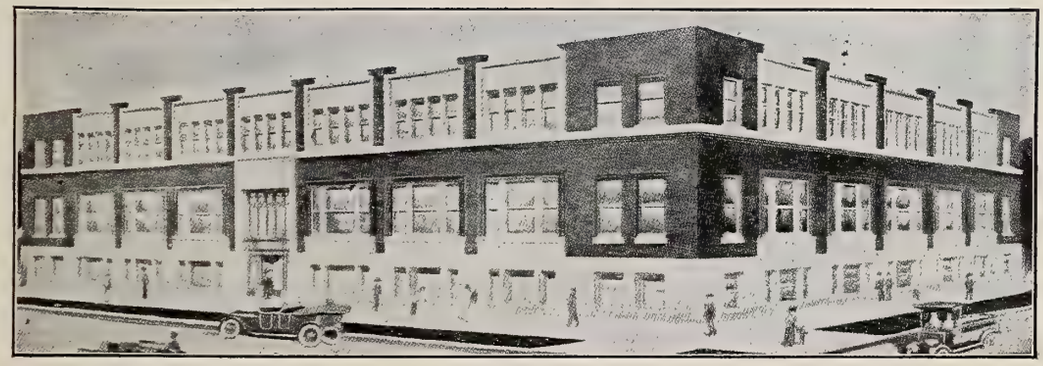


The Prestophone—the Canadian Automatic that requires no Switchboard operator

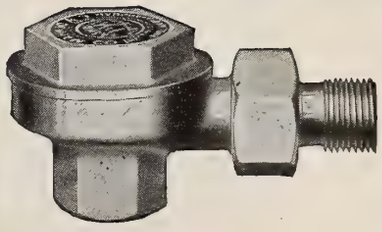
Canadian Independent Telephone Co. Limited

251 ADELAIDE ST. WEST, TORONTO

From Start to Finish The Prestophone is MADE IN CANADA



Stovel Co., Ltd., Winnipeg, Man. Dunham Vacuum System of Heating



DUNHAM Radiator Traps

Combined with Dunham Service to make a Heating System which gives complete satisfaction in this building.

There are numerous heating systems which only half heat. Perhaps certain parts can seldom be heated. Then possibly there is trouble and damage resulting from leaky, sputtering air valves on radiators. Maybe you already have radiator traps which constantly need attention or leak steam.

These conditions do not make efficient, economical Heating System. The application of DUNHAM RADIATOR TRAPS eliminates these faults and provides a system of heating giving satisfaction and economy.

Are you interested? Let us show you our plan of service.

C. A. DUNHAM CO., Limited - Toronto, Canada

OTTAWA—214 Booth Building HALIFAX—McCurdy Building
MONTREAL—Room 20, 11 St. Sacrament Street VANCOUVER—520 Duncan Building WINNIPEG—405 Tribune Building

ADJUSTABLE TAPS

FOR Shrapnel and H.E. Shells



ON hard, tough shell steel, solid taps are too expensive as the excessive wear quickly puts them below gauge size.

The simple adjustment on the tap, shown in our cut, was gotten out to overcome the effect of this excessive wear and to provide an economical substitute for the expensive chaser tap.

The accuracy to size and form is easily maintained and the life of the tool prolonged far beyond that of a solid tap at a comparatively small advance in price.

We can supply them for all tapping operations on Shrapnel and H.E. shells to 4.5" diameter.

Ask for our list and prices of Shell Tools
Reamers, Taps, Dies, Cutters

If you have not received our No. 8 catalogue yet, we have one for you.

PRATT & WHITNEY CO.

of Canada, Limited
Dundas : Ontario

MONTREAL
723 Drummond Bldg.

WINNIPEG
1205 McArthur Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

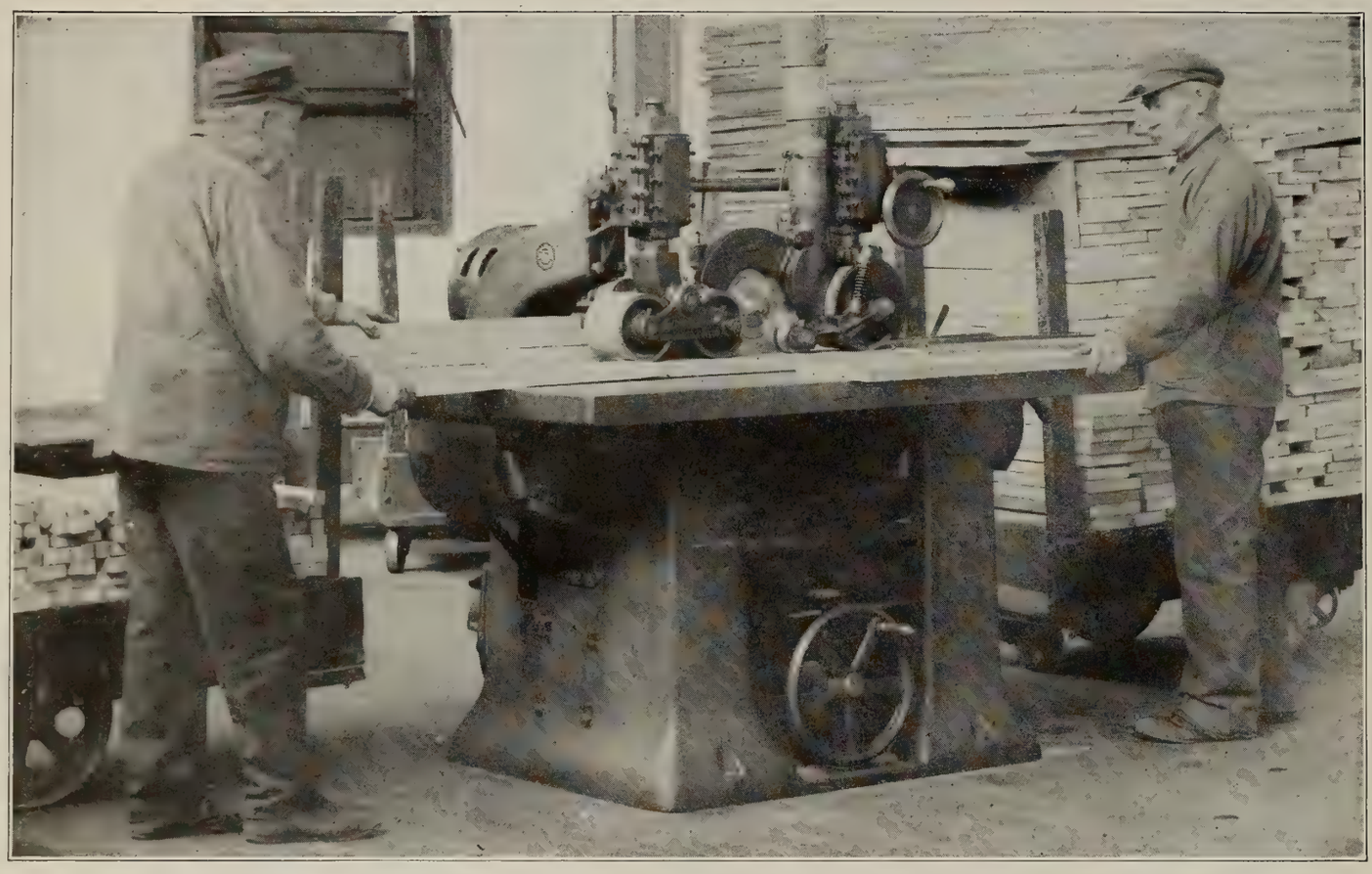
THE JOHN BERTRAM & SONS CO. LIMITED

DUNDAS, ONTARIO, CANADA

MONTREAL
723 Drummond Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

WINNIPEG
1205 McArthur Bldg.



Is Your Factory Equipped to Save the Pennies?

WOODWORKERS everywhere agree that such equipment was never more necessary than right now. Manufacturing costs are gradually devouring the margin of profit. Savings of costs in **dollars** have all been made. Now, there is no hope of rescue for profit except in the **pennies.** Save the pennies and the **profits** will save themselves. It must be done, and there is no greater help than a

Yates *Type G-2 Edging and Ripping Saw*

Its Automatic Chain Feed carries stock unvaryingly past the saw with no attention other than inserting it under the infeed roll. Fast feeds enable it to manufacture from 40,000 to 70,000 lineal feet of lumber a day.

The rugged simplicity of its construction makes it unusually economical in upkeep costs. When given ordinary care, stops for repairs are unknown.

In addition, the Type G-2 can be operated successfully by the cheapest class of factory workers.

Haven't you an idea how the Type G-2 could save money for you? If you would know more of the uses and construction of this "life-guard" of your profits, send for our new circular G-2. It's free, with no "strings" attached.

P. B. Yates Machine Co. Ltd.

HAMILTON, ONT. CANADA

U.S. Plant: Beloit, Wisconsin, U.S.A.

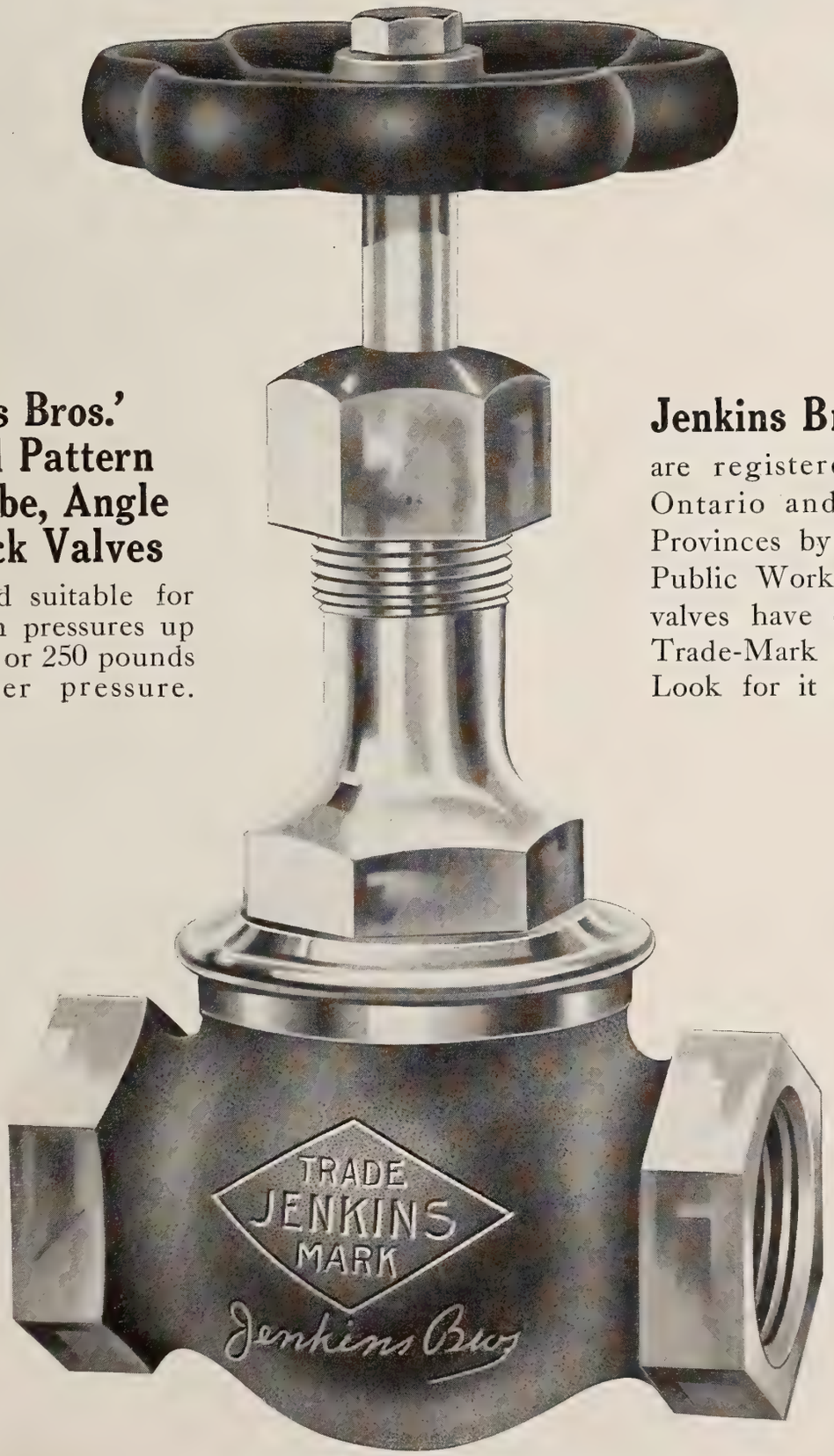
Jenkins Bros.'

STANDARD PATTERN

Brass Globe, Angle and Check Valves

"Made in Canada"

"Made in Canada"



Jenkins Bros.' Standard Pattern Brass Globe, Angle and Check Valves

are guaranteed suitable for working steam pressures up to 175 pounds or 250 pounds working water pressure.

Jenkins Bros.' Valves

are registered for use in Ontario and the Western Provinces by the Depts. of Public Works. All genuine valves have our Diamond Trade-Mark cast on body. Look for it before buying.

Catalogue No. 8 free on request.

Jenkins Bros. Limited

103 St. Remi St. Montreal

FIG. 106—STANDARD PATTERN BRASS GLOBE VALVE, SCREWED

CUT GEARS



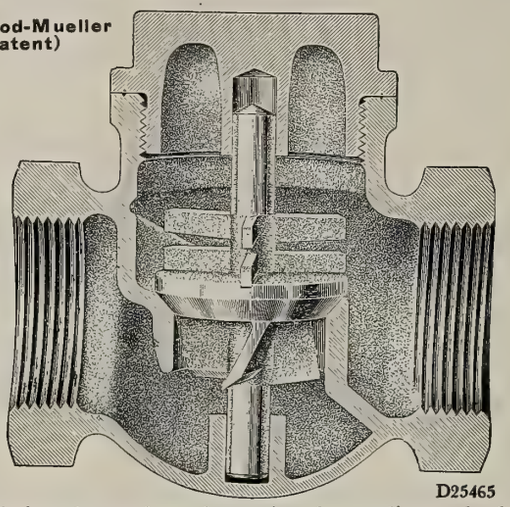
We offer you real
GEAR SERVICE

Write Us for Quotations.

Hamilton Gear & Machine Co.
VAN HORNE ST. **TORONTO**

MUELLER
NON-FOULING
Turbine Check Valves

(McLeod-Mueller Patent)



D25465

Were designed to perform the service of an ordinary check valve with extraordinary efficiency and have fully justified themselves.

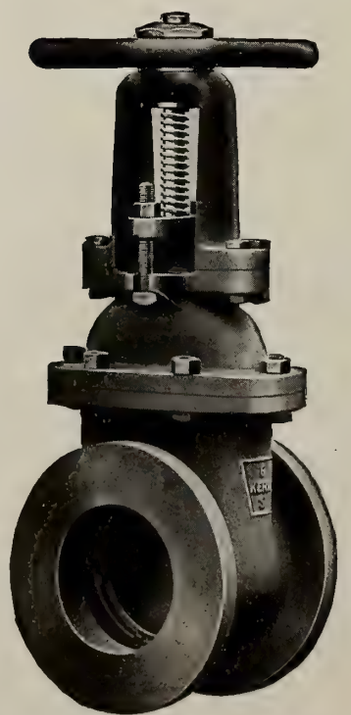
Steam, water, oil, or similar liquids of common density are, by constant agitation from action of turbine wings, prevented from fouling the seat and rendering the check ineffective.

Sample on approval. Make **your** request **now.**

WRITE FOR CATALOG "D"

H. Mueller Mfg. Co., Limited
SARNIA :: ONTARIO

Kerr Iron Body Gate Valves

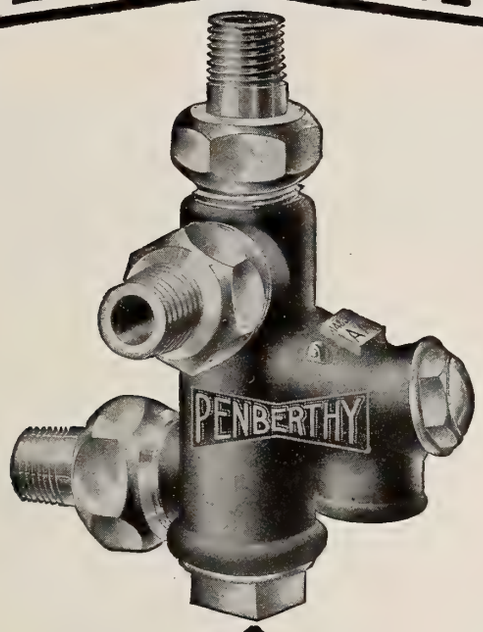


embody all that is modern in gate valve construction. Strong, compact and pleasing in appearance.

Every valve tested and guaranteed.

THE KERR ENGINE CO., Limited
Valve Manufacturers :: Walkerville, Ontario

PENBERTHY



What's Behind This Name On Your Injector?

The name "Penberthy" has appeared on injectors for thirty-one years. Have you ever thought why Penberthy's leadership has never been disputed in all this time? Here are some facts of workmanship, service and performance. Read them—they are an explanation of Penberthy long, reliable service.

What the Penberthy Injector Will Do—

All Penberthy Injectors are guaranteed to the following minimum performance. Special Penberthys for higher duty.

Work on either clean or sandy water.
Very low steam consumption.
Start low—20-22 lb. steam on 3-ft. lift.
Work High 165-170 lb. steam on 3-ft. lift.
Lift water 20-24 ft. on 60-80 lb. steam.
Handle hot water.
125 deg. to 130 deg. on 60 to 80 lb. steam.
115 deg.-120 deg., at 100 lb. steam.
95 deg.-104 deg. at 125 lb. steam.

AND—

By a simple adjustment deliver water at 200 deg.-212 deg. on any steam pressure over 50 lb.

How We Insure Penberthy Performance—

Every Penberthy Injector has behind it the 31 years of accumulated knowledge of a concern whose business is building high-grade brass specialties.

Penberthy Injectors are built from the finest grade of metals.

We continuously make expensive laboratory tests of these metals to insure uniformity.

Penberthy parts are interchangeable. Every Penberthy Injector is tested on an independent boiler under actual working conditions before it leaves our plant.

Penberthy Service—

An experimental department of Injector experts is always ready to help on special problems without charge.

Interchangeable repair parts may be obtained from almost every dealer in steam supplies.

The Penberthy Guarantee of satisfactory performance and Penberthy Engineering Service go with every Penberthy Injector.

We have put some very useful and interesting facts about Injectors into the Penberthy Catalog. Write for a copy.

Penberthy Injector Company, Limited

(Established 1886)

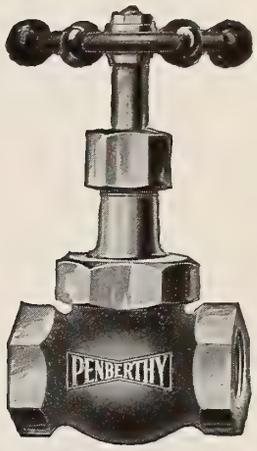
WINDSOR - ONTARIO

THESE High-Grade Valves are made in the same shops by the same skilled workmen as the Penberthy Injector.

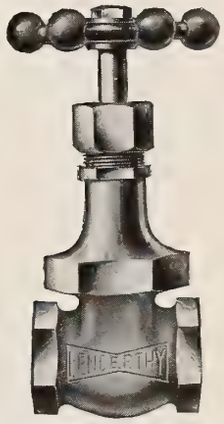
"Knowledge is Power"

and the accumulated knowledge of 31 years has taught us

How to Make "Something Better in Valves"



GLOBE VALVE
With the Outside Bonnet Construction

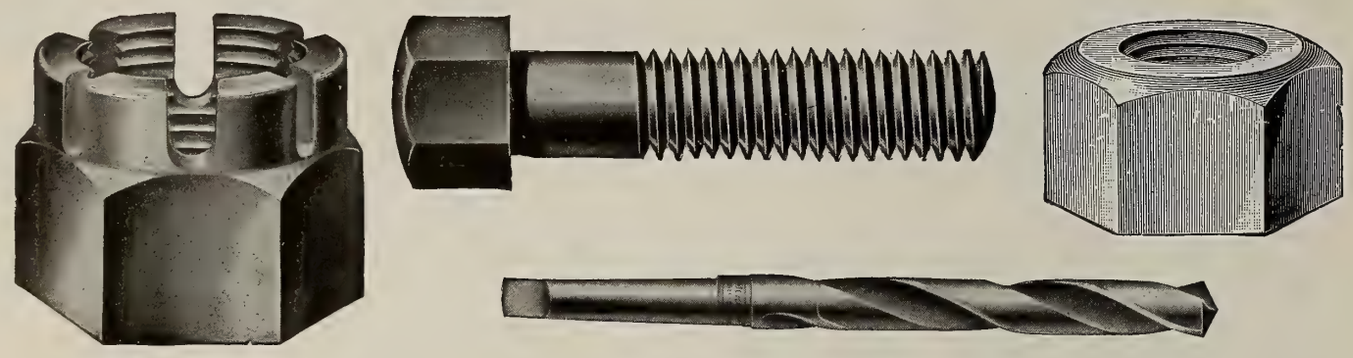


GATE VALVE
With the Outside Bonnet Construction



SWING CHECK
Regrinding Type Double Plug Construction, 200 lbs. Steam Pressure

John Morrow Screw & Nut Co., Limited



High-grade Products

INGERSOLL - ONTARIO

Morrow Drills Excel in Efficiency *Morrow Drills are Made in Canada*

YOU CAN INCREASE YOUR POWER WITHOUT INCREASING THE SIZE OF YOUR POWER PLANT

Your present line shafting is consuming from 15% to 60% of your power.

The Chapman Double Ball Bearing will save this waste and turn it into productive energy.

They will also reduce your oiling and attention to a minimum.

They fit any adjustable hanger and the change can be made with but little delay to you.



In use in over 2,000 Canadian Factories

The Chapman Double Ball Bearing Company

OF CANADA LIMITED

339-351 Sorauren Avenue . . Toronto, Canada

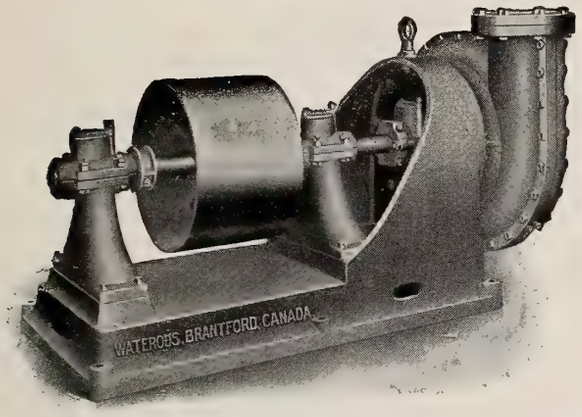
Waterous
BRANTFORD, ONTARIO, CANADA

PUMPS *for* EVERY PURPOSE

Will handle foaming, non-foaming and precipitating liquors, pulp stuff and water containing suspended matter up to 20 per cent.

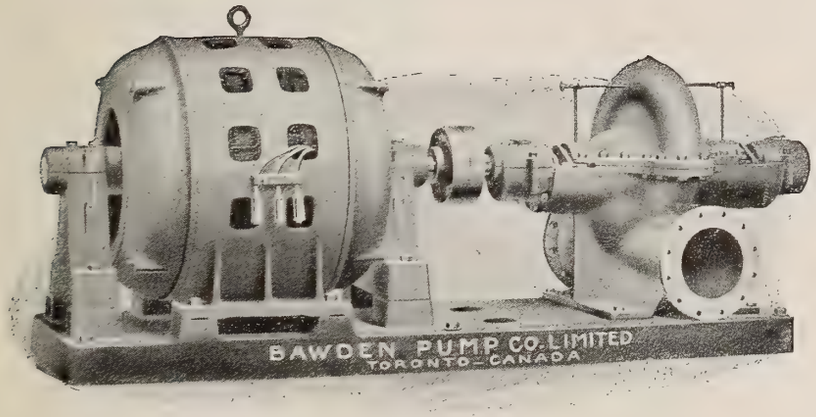
Recommended for Pulp Mills, Chemical Works, Sugar Factories and Refineries, Tanneries, Glue and Gelatine Works. We build a contractor's pump that is just right for the work.

Both horizontal and vertical types. Capacities up to 1200 gallons per min.



The Waterous Engine Works Co., Ltd. BRANTFORD CANADA

BAWDEN PUMPS

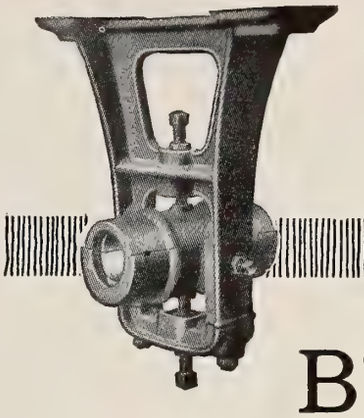


Steam and Power Centrifugal and Reciprocating Pumps for all purposes.

Canadian Made Pumps With a Reputation Equal to any Pump in the World

THE BAWDEN PUMP CO., Limited

Sterling Road, Toronto, Canada



An Ideal Combination

BOND Universal Drop Hangers and "Spiro" Compression Couplings.

The "Bond" Hangers are double braced in every particular, have universal adjustment, babbitted and REAMED, ring oiling, ball and socket bearings, and the steel-set screws are case-hardened, making an exceptionally rigid and well-lubricated hanger.

The Bond "Spiro" Compression Coupling has a gripping power at least 50% greater than any other. It does not require keys and is easily put on or taken off the shaft.

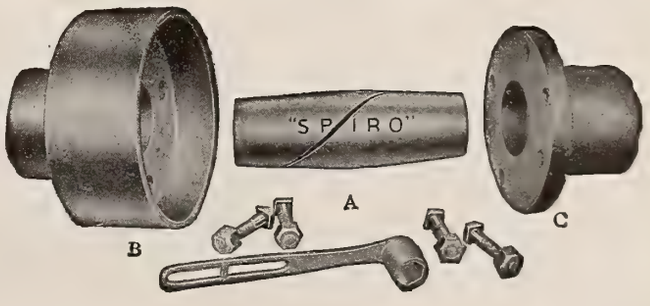
We are the originators of the Four Point Hangers. Others might do, but make "double sure" and insist upon having the ORIGINAL "Bond" Hanger and the Compression Coupling with the spiral slot.

It will pay you to investigate the "Bond" line of Power Transmission Machinery.

May we send you our catalogue?

Canadian Bond Hanger & Coupling Company, Limited

ALEXANDRIA - ONTARIO



A 50% SAVING

should be of interest to every executive who is responsible for the conduct of a factory. And we can prove that **Dodge Wood Split Pulleys** effect an actual saving of 50% of the power wastage always involved in the use of metal pulleys. Belts have a better grip on a Dodge Wood Split Pulley than on any other make. There is less slipping and consequently more power is delivered from shaft to machine. Any manufacturer in whose shop metal pulleys are now used, is invited to send for the proved facts. Write for them to-day, and you will be shown how to make a big saving in overhead charges. You may be skeptical—**but**—your directors rely on you to **stop the leaks!** Investigation costs you nothing. Get the facts **now.**

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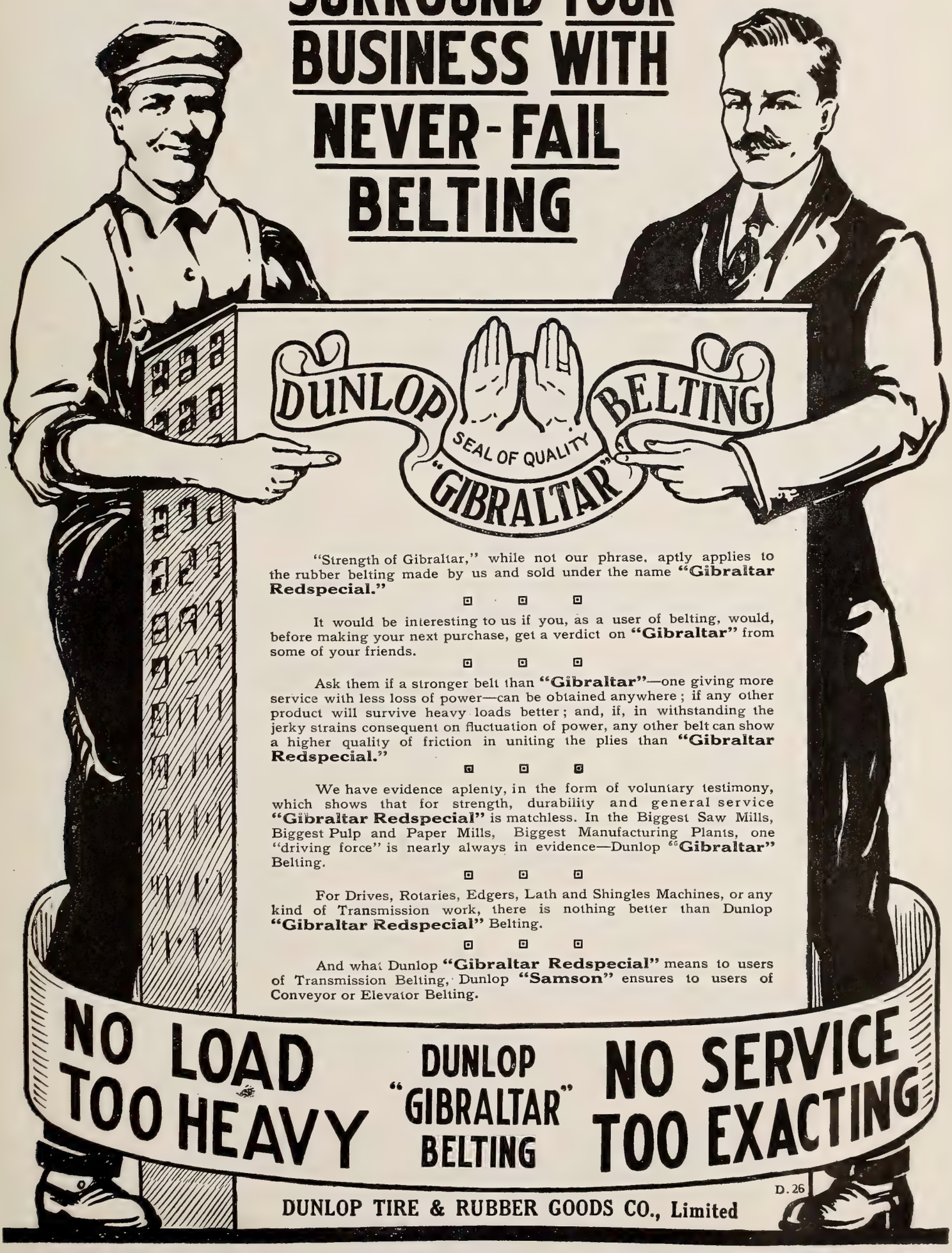
Wood Split Pulleys

DODGE MANUFACTURING CO.

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"Strength of Gibraltar," while not our phrase, aptly applies to the rubber belting made by us and sold under the name **"Gibraltar Redspecial."**

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It would be interesting to us if you, as a user of belting, would, before making your next purchase, get a verdict on **"Gibraltar"** from some of your friends.

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Ask them if a stronger belt than **"Gibraltar"**—one giving more service with less loss of power—can be obtained anywhere; if any other product will survive heavy loads better; and, if, in withstanding the jerky strains consequent on fluctuation of power, any other belt can show a higher quality of friction in uniting the plies than **"Gibraltar Redspecial."**

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We have evidence aplenty, in the form of voluntary testimony, which shows that for strength, durability and general service **"Gibraltar Redspecial"** is matchless. In the Biggest Saw Mills, Biggest Pulp and Paper Mills, Biggest Manufacturing Plants, one "driving force" is nearly always in evidence—Dunlop **"Gibraltar"** Belting.

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For Drives, Rotaries, Edgers, Lath and Shingles Machines, or any kind of Transmission work, there is nothing better than Dunlop **"Gibraltar Redspecial"** Belting.

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And what Dunlop **"Gibraltar Redspecial"** means to users of Transmission Belting, Dunlop **"Samson"** ensures to users of Conveyor or Elevator Belting.

NO LOAD TOO HEAVY — DUNLOP "GIBRALTAR" BELTING — NO SERVICE TOO EXACTING

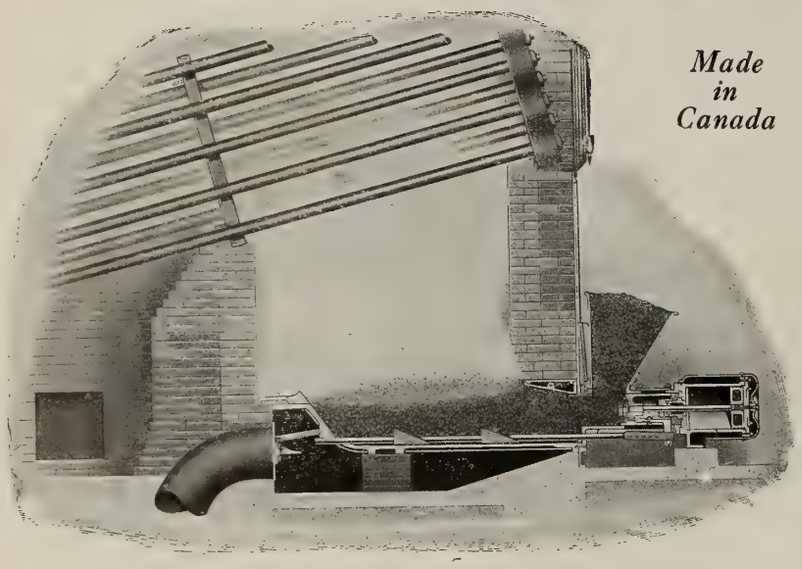
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DUNLOP TIRE & RUBBER GOODS CO., Limited

Fuel Economy and Boiler Efficiency

ARE BOTH ASSURED WHEN YOU INSTALL A

Jones Underfeed Stoker



Made in Canada

This constitutes the reason why our plant is always busy. Once a good engineer investigates the principle of the Jones Underfeed Stoker and observes it in practical use, he is convinced of its absolute necessity to a really efficient steam power plant. Hundreds of boiler rooms are to-day effecting fuel savings running from 15% to 25% because a Jones Underfeed Stoker has been installed.

If any mechanical device has ever established a successful record that is being indisputably proved over and over again under practical conditions, that device is the Jones Underfeed Stoker.

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JONES UNDERFEED STOKER CO., Limited

37-41 BRITAIN STREET - TORONTO

"We were able to cut out one of our boilers—saving fuel and getting better results"

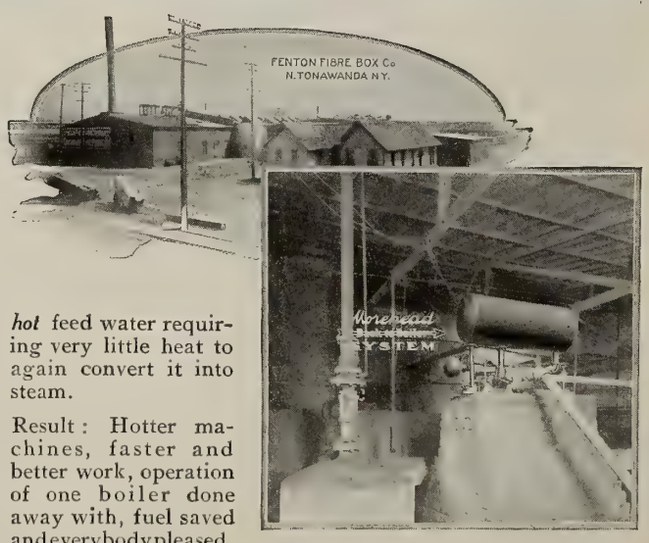
THIS STATEMENT from the Fenton Fibre Box Co., of N. Tonawanda, N.Y., is simply a repetition of similar claims received from several thousand other users of the simple and comparatively inexpensive

Morehead Back to Boiler SYSTEM

of steam line drainage and boiler feeding.

In this plant the returns from the steam heated corrigators, hot plates, etc., were formerly collected in a hot well and pumped back to the boiler by the notoriously wasteful steam pump method.

With the Morehead System installed all water of condensation is returned to the boilers direct and under pressure as pure *hot* feed water requiring very little heat to again convert it into steam.



Result: Hotter machines, faster and better work, operation of one boiler done away with, fuel saved and everybody pleased.

So thoroughly satisfied was this progressive concern with the Morehead System that they immediately installed a duplicate System in the Buffalo Box Factory which they own and control.

You can likewise convert your radiation losses into their equivalent of dollars. Tell us what you are doing and we will tell you—without obligation—what we can do for you.

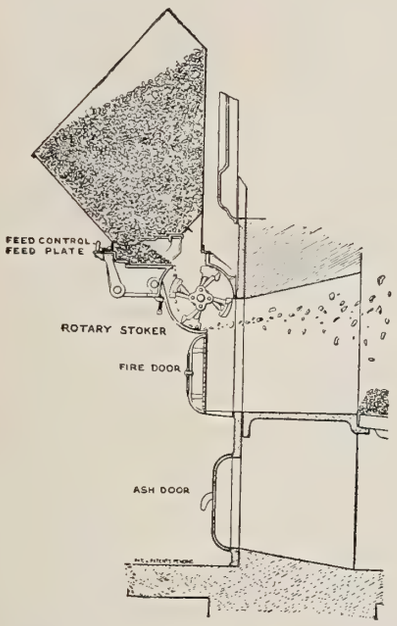
Get the advice of our engineering department with our 25 years' experience in solving steam drainage and boiler feeding problems.

Canadian Morehead Manufacturing Company

DEPT. "K" - WOODSTOCK, ONTARIO

410

REASON WITH US FOR A MOMENT!



The stoker mechanically feeds and uniformly spreads any type of fuel in a light, continuous stream over the entire surface of your present fire grates.

With coal and labor at the present price, can you afford to operate the boiler room —the heart of your plant, under any other than the most economical conditions?

Why buy coal costing from $8 to $10 per ton, when you can get all the steam you want with fuel at about half the price?

Galt Sprinkler Stokers are Inexpensive, Smokeless and Efficient

They will burn low-priced coal, including the screenings from anthracite, bituminous, coke and lignite fuels, and when used in conjunction with our modern Automatic Turbo-Blower will double the capacity of the boilers, should that be necessary.

What We Claim

That we will furnish indisputable facts and figures to any manufacturer or others that we can, by using cheap fuel, effect savings in the cost of producing steam varying from 15% to 30% or over, depending on conditions and the price of coal.

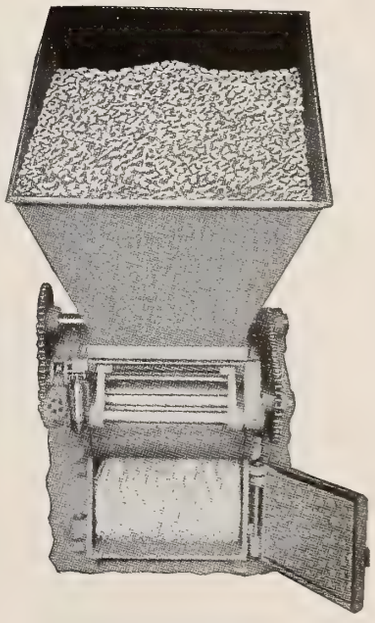
A Large Montreal Plant Saved 50,000 Dollars Last Year

By utilizing low-priced fuel. Could your conditions be improved upon? The service of our combustion engineer is at your command, free of all cost—send for him. It places you under no obligation.

Galt Sprinkler Stokers can be installed ready for use on any type or size of boiler in from 8 to 10 hours and without alteration to your present boiler fronts and furnace settings. This is an important point to be considered regarding stokers.

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Ask for our 40-page illustrated catalogue.



Allows free access to the furnace at all times.

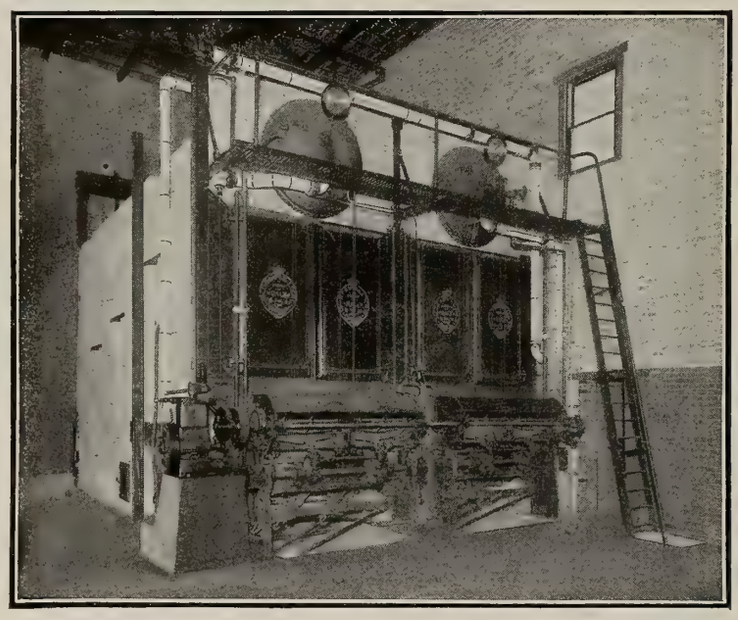
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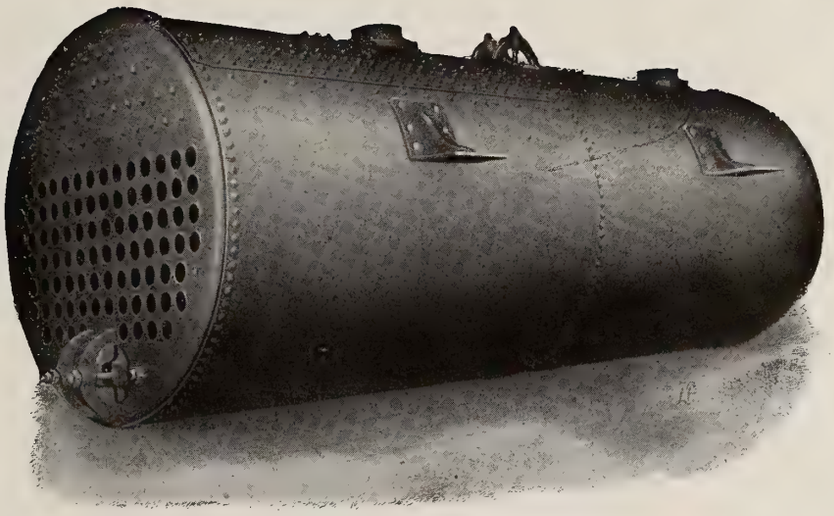
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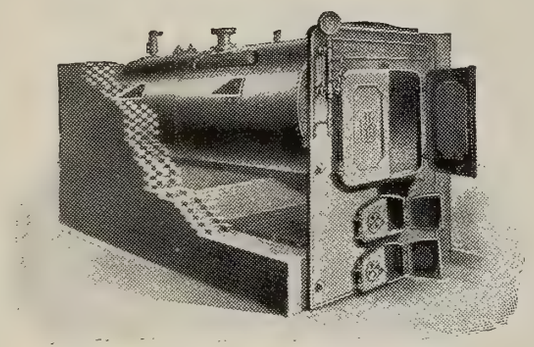
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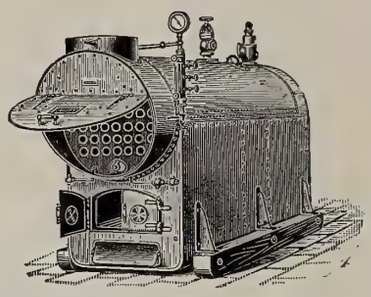
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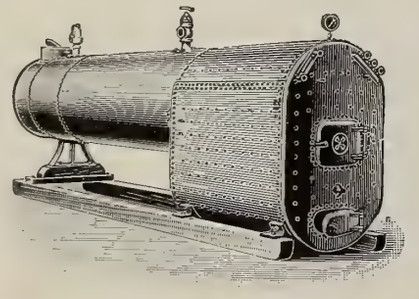


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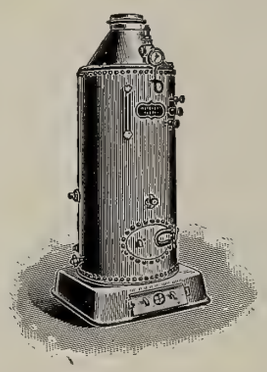
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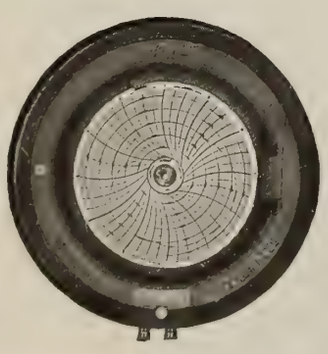
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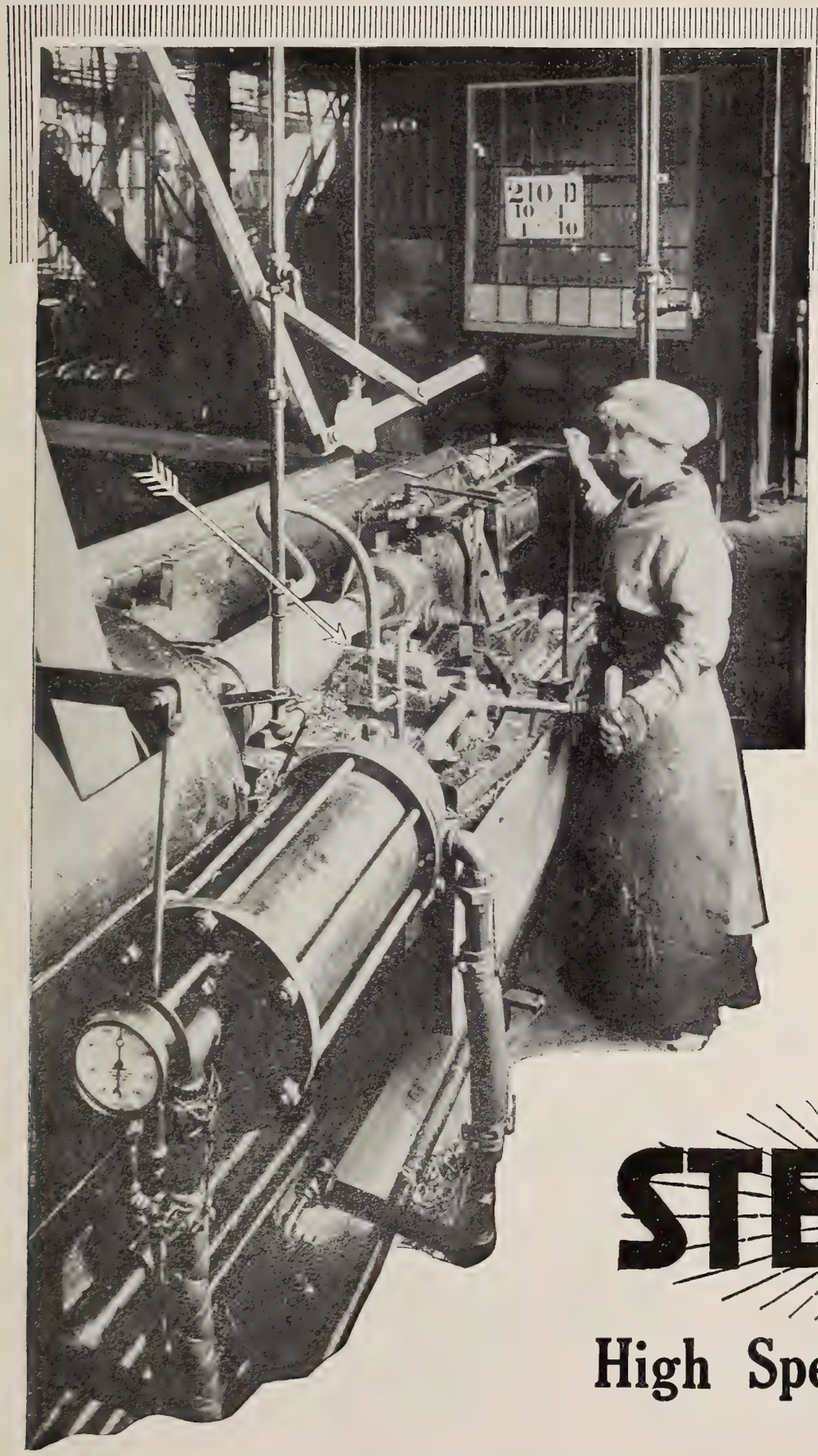
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The cut starts at a speed exceeding 200 ft. per min. and machines the surface 9 in. long in 1 min. 24 sec.

The tool is given a feed of ⅛ in. per revolution and imparts a highly finished surface to the work.

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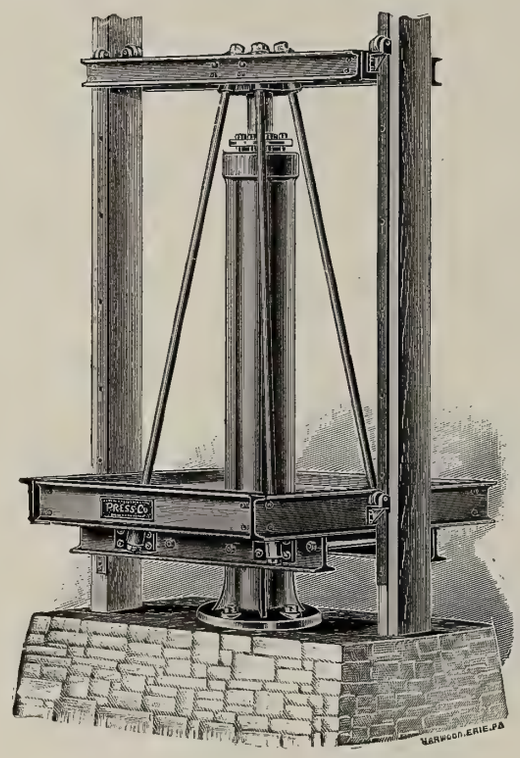
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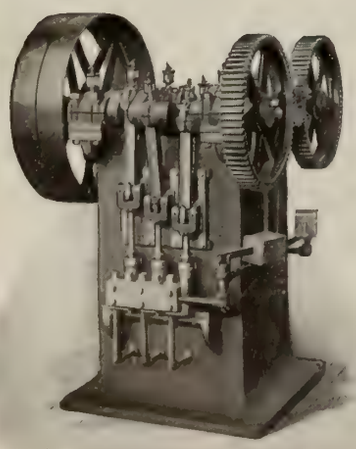
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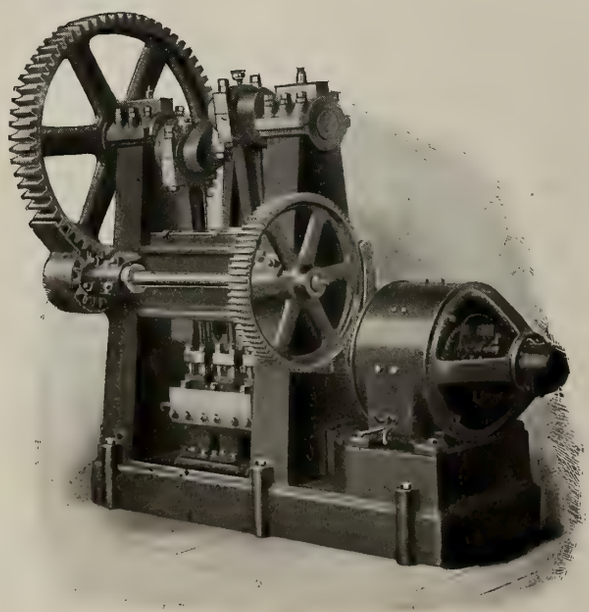


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Any pressure desired

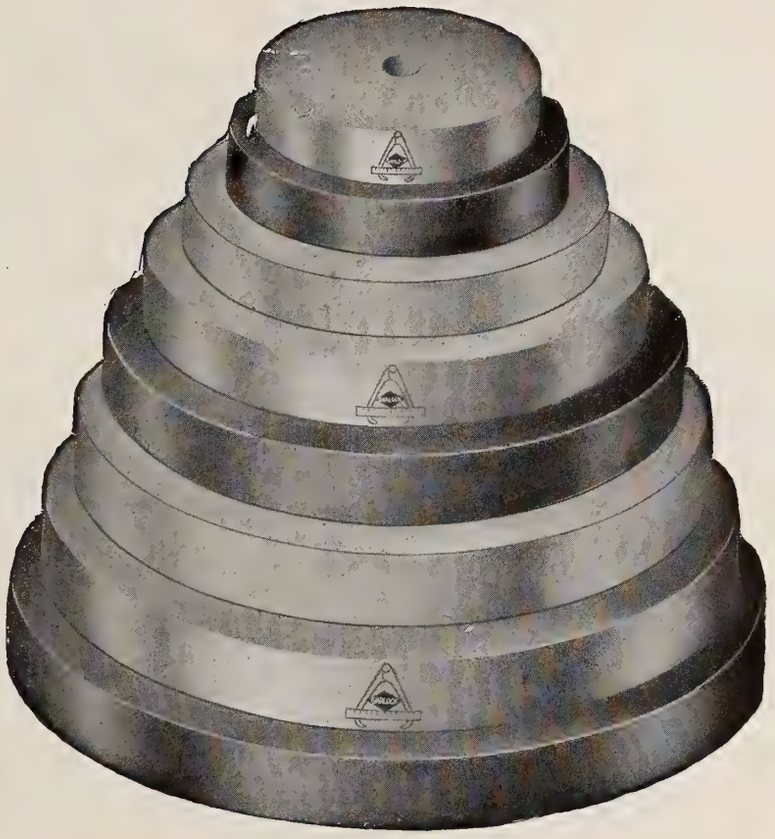


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We guarantee our pump valves to give satisfactory service when used under conditions for which they are intended.

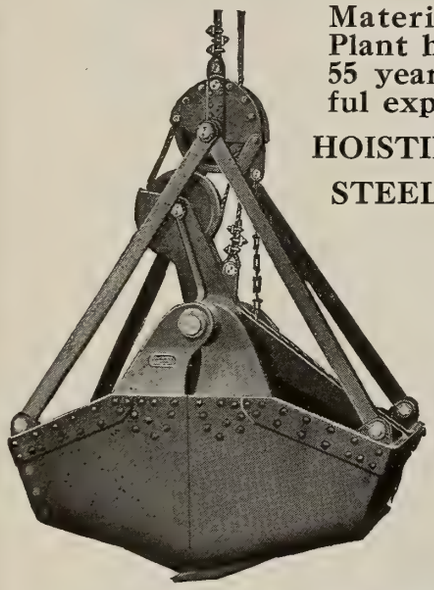
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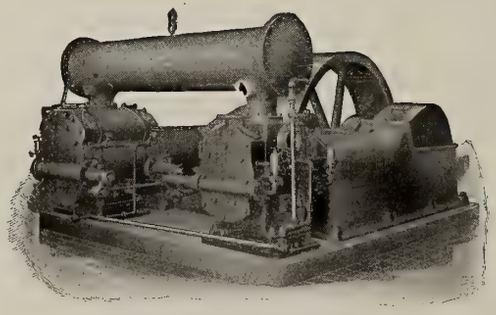


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EFFICIENT, RUGGED

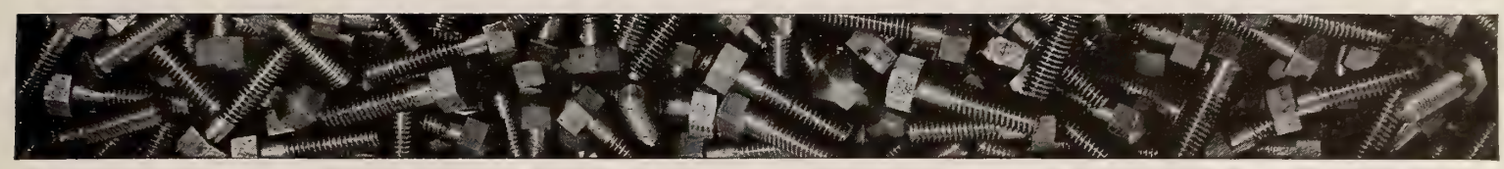
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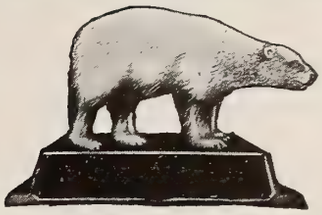
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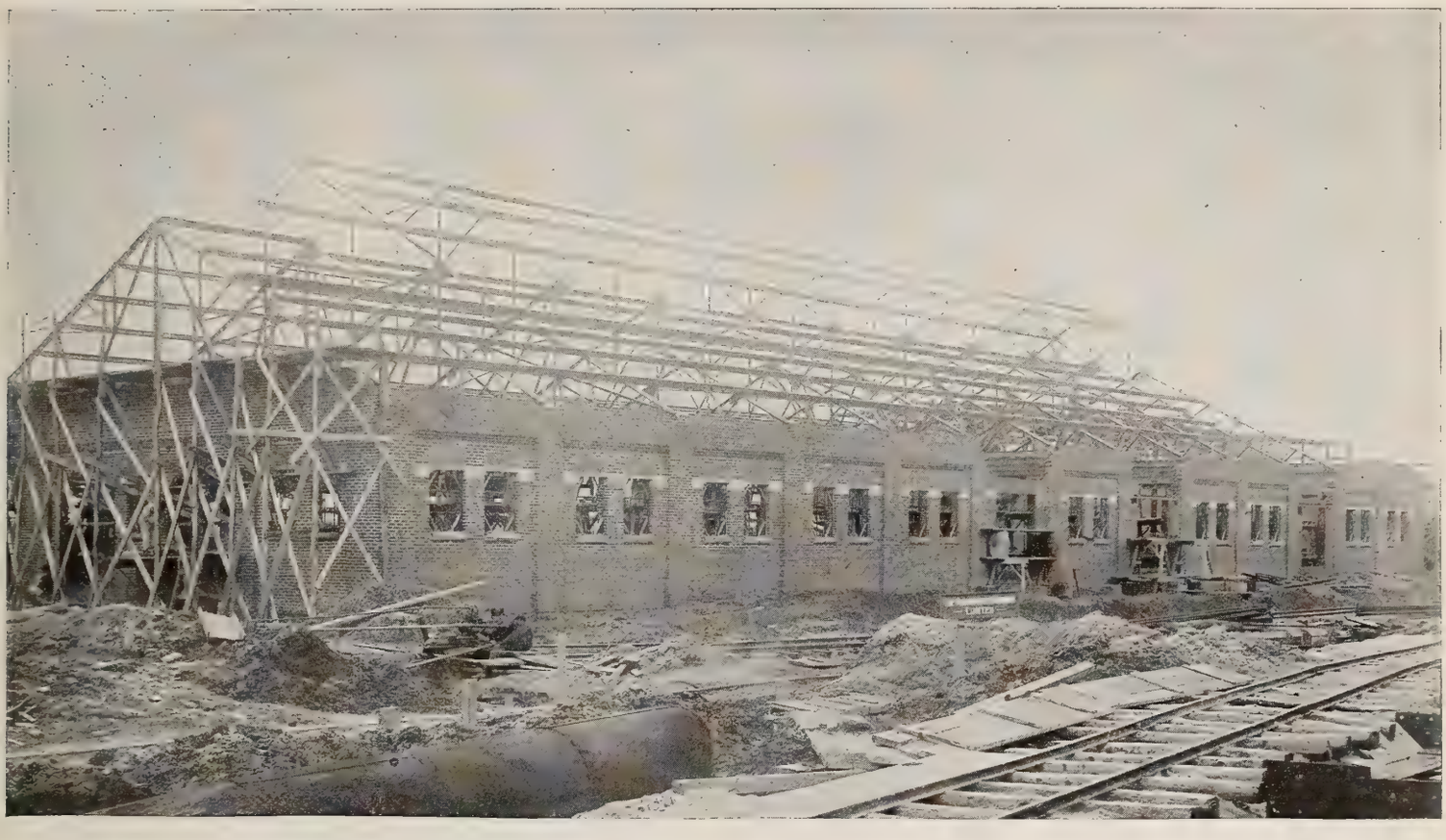
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Copper, Brass and all Copper Alloy Tubes, Sheets and Rods Rolled, Drawn and Extruded Metals

Office and Works:
Lachine Locks, P.Q., Canada

P.O. Address: MONTREAL, P.Q. Cable Address: "DOMINION"



One of Nineteen Buildings Under Construction

THE construction and installation of large Industrial Plants include many features requiring the services of specialists. The capability of handling such work is confined to Engineering Contractors tendering the services of an organization skilled in the several types of construction involved. We offer such services.

THE FOUNDATION COMPANY, LIMITED

MONTREAL - WINNIPEG

Safer Construction—At Less Cost



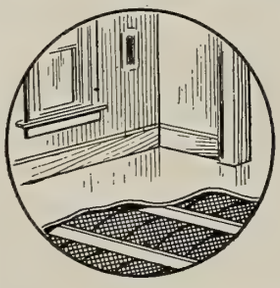
Even before your plans are complete, consider the effect of time and decay on the walls, ceilings, floors and roofs of the buildings you are planning to erect. Why risk the loss of unending repairs and the lessening value of your buildings when



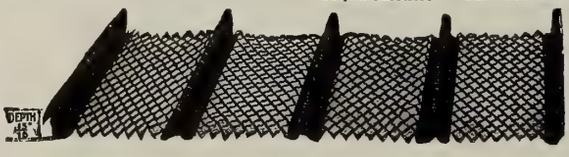
PEDLAR'S RIB FABRIC

will give you permanent safety and protection at the cost of ordinary construction? Not only is it the strongest fireproof reinforcement by actual tests, but it simplifies construction, does away with costly forms and saves you money at every turn, even in the erection of your structure.

Pedlar's Rib Fabric binds itself to the plaster or concrete with such a definite, unyielding grip, permanent smoothness and safety are a practical certainty. Made in three depths of rib:—deep-rib, five-rib and three-rib and in gauges to suit any requirements. Ask for the complete Fireproofing Catalogue I.C.



Made in Three Depths of Rib



High-Rib
Three-Rib
Five-Rib



The PEDLAR PEOPLE, Limited

(Established 1861)

EXECUTIVE OFFICE AND FACTORIES: OSHAWA, ONT.

Branches: Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver

1192

STRUCTURAL STEEL

.. AND ..

BRIDGE BUILDERS



We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of
Beams, Column Sections, Angles, Tees, Plates, Bars, Checkered Floor Plates, etc.

McGregor & McIntyre, Limited

1139 SHAW ST. TORONTO, CAN.

Standard Clay Products Limited

MANUFACTURERS OF

Salt Glazed, Vitrified Sewer and Culvert Pipes

4 inch to 30 inch

Square and Round Flue Linings, Inverts, Building Blocks

Fire Clay Stove and Range Bricks, Locomotive Arch Blocks

And All Shapes in Fire Clay

FACTORIES AT

ST. JOHNS, P.Q., and NEW GLASGOW, N.S.



Paper Shell Factory, Peters Cartridge Co., Kings Mills, Ohio

Our Record with Peters Cartridge Co.

Nov. 1915.	Paper Shell Factory	$195,000.00
Jan. 1916.	Annealing Bldg.	10,000.00
Mar. 1916.	Power Plant	150,000.00
June 1916.	Imhoff Tank	5,000.00
Mar. 1917.	Packing Case Bldg.	175,000.00
Mar. 1917.	Shot Tower	100,000.00
	Total value of Contracts	$635,000.00

We always try to carry on each contract in such a manner as will ensure us the next contract which the owner may have to let.

WELLS AND GRAY, Limited

ENGINEERS AND CONTRACTORS

Branch Office:
Bank of Commerce Bldg.
Windsor, Ont.

Head Office:
247 Confederation Life Bldg.
Toronto, Ont.



Overhead Charges

A certain man returned thanks for a good bed under him, a good supper inside him, and a good roof over him.

He was particularly grateful for the roof.

It let him sleep o'nights.

It did not rattle or strip off in a gale.

Tornadoes tore at it in vain.

Snow and rain could not penetrate it.

It kept the man warm in the winter and cool in summer, dry in wet.

It needed no coat of paint.

It was artistic—better to look upon than the "other kinds."

It made his dwelling look snug and homelike.

On every count it reduced his Overhead Charges.

It was a Shingle Roof of Full Count BEAVER BRAND White Cedar Shingles manufactured by the

BATHURST LUMBER CO., Limited

Bathurst, N.B., Canada



Wood Filing Cabinets

HORIZONTAL CONSTRUCTION

There are Office Specialty Filing Sections specially designed for every kind of business record—Letters, Bills, Invoices, Reports, Card Records, Cheques, Documents, Maps, and Drawings. File drawers give classified, compact arrangement for records.



Steel Files

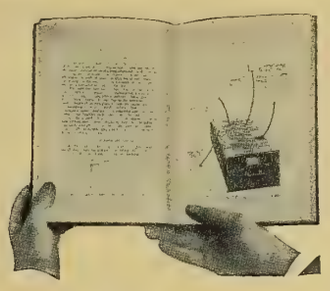
Office Specialty Steel Files are designed to give greater protection against fire and extreme heat. If you prefer the kind of a Cabinet that will give longest service with security, choose Office Specialty STEEL.



Correspondence Files

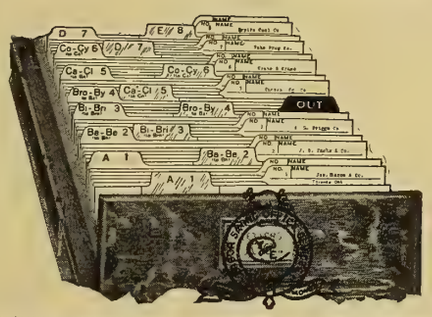
Office Specialty "Upright" Vertical Files are the choice of thousands of Canadian offices for their correspondence filing. Easy to operate, refined in appearance.

Ask about our new "800" line.



"Modern Filing—a Text Book on Office System"

Get a copy of "Modern Filing"—our textbook on Office System; for yourself—your file clerk—your office library; complete school and office textbook, fully illustrated. 105 pages. 75 illustrations. Price $1.50.



OFFICE SPECIALTY DIRECT NAME SYSTEM OF VERTICAL FILING

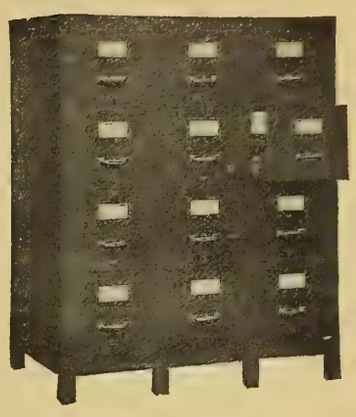
THE OFFICE SPECIALTY

Files and Systems

Office Specialty make an immense line of Filing Devices and Systems comprising more than 3,000 items. These Office Specialty Filing and Record Keeping Systems simplify office work in every detail for the Business and Professional man.

Outstanding amongst the Office Specialty products are Sectional Files in Wood and Steel, Record Safes, Card Index Systems, Efficiency Desks and Filing System Supplies. You'll be sure of finding every filing requisite necessary in your office, in the Office Specialty Line.

Use the coupon for detailed information.



Steel Filing Cabinets

UPRIGHT CONSTRUCTION

These Office Specialty Cabinets have reached the apex of Filing Cabinet manufacturing skill. Some of their outstanding features are Automatic Drawer Latches, Frictionless Drawer Slides, Detachable Ends, Sanitary Base, Double Wall construction throughout.



Steel Record Safe

For protection of valuable records against the uncertain dangers of fire with extreme heat, the Office Specialty Record Safe gives exceptional service. Interior of Safe is of suitable dimensions to take Office Specialty Filing Sections of Wood or Steel, or adjustable Steel Shelves. For security, convenience and large capacity of records this safe is of exceptional value.

MADE IN CANADA

and sold exclusively through our own Stores and Travelling Representatives

THE OFFICE SPECIALTY MFG. CO. LIMITED

Largest Makers of Filing Devices in the British Empire

Home Office and Factories: NEWMARKET, Can.

8 FILING EQUIPMENT STORES:

TORONTO MONTREAL OTTAWA HALIFAX
WINNIPEG REGINA EDMONTON VANCOUVER

826

OFFICE SPECIALTY MFG. CO. LIMITED
NEWMARKET, CAN.
(or nearest Branch)

Please send, without obligation, particulars on Office Specialty Filing Cabinets, Wood ☐, Steel ☐; Record Safe ☐; Efficiency Desks ☐; Card Record Desks ☐; Direct Name System of Vertical Filing ☐; 16 Time Saving Office Specialties ☐. Send ..... copies of "Modern Filing" at $1.50 per copy.

Name .....

Address .....

Honour Rolls
and
Illuminated Addresses
also
ENGRAVING
FOR GENERAL
ADVERTISING
PURPOSES

HALF TONES
ZINC, WOOD,
ELECTROTYPING

J. L. JONES
ENGRAVING CO. LIMITED
133 RICHMOND
STREET WEST
TORONTO
CANADA

BROWN BROS., LIMITED



Manufacturers of

ACCOUNT BOOKS

Loose Leaf Ledgers, Binders, etc.
Leather Goods, Diaries, Paper,
Stationery, Office Supplies

OFFICE AND FACTORY : : TORONTO
SIMCOE, PEARL AND ADELAIDE STS.

Riordon Pulp & Paper
Company, Limited
Montreal

SULPHITE FIBRE WOOD PULP
FOR PAPER MILLS
CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS
SPRUCE" SHEATHING in 36 and
72 INCH ROLLS

SPRUCE LUMBER, CLAPBOARDS
CEDAR SHINGLES, RAILWAY
TIES, FENCE POSTS

Pulp Mills: Hawkesbury and Merritton
Saw Mills:
Calumet, L'Annonciation, Boule, Quennouille, P.Q.

WE DO NOT MAKE PAPER

BANK OF MONTREAL

ESTABLISHED 100 YEARS (1817-1917)

Capital Paid Up - -	$ 16,000,000
Rest - - - - -	16,000,000
Undivided Profits - -	1,414,423
Total Assets - - -	365,215,541

BOARD OF DIRECTORS:
Sir Vincent Meredith, Bart., President
C. B. Gordon, Vice-President

R. B. Angus, Esq. — H. R. Drummond, Esq.
Sir William Macdonald — D. Forbes Angus, Esq.
Lord Shaughnessy, K.C.V.O. — Wm. McMaster, Esq.
C. R. Hosmer, Esq. — Major Herb. Molson, M.C.
A. Baumgarten, Esq. — Harold Kennedy, Esq.

Head Office: MONTREAL

Gen. Manager, Sir Frederick Williams-Taylor, LL.D.
Assistant Gen. Manager, A. D. Braithwaite

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

Branches at all important points in Canada, and at

Agency:

NEW YORK 64 Wall St. — LONDON, ENGLAND 47 Threadneedle St. — CHICAGO 108 South La Salle St.

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

JOHN AIRD, General Manager — H. V. F. JONES, Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 57

THE ROYAL BANK OF CANADA

Incorporated 1869

Capital Authorized	$25,000,000
Capital Paid Up	$12,900,000
Reserve & Undivided Profits	$14,300,000
Total Assets	$270,000,000

HEAD OFFICE, MONTREAL

BOARD OF DIRECTORS

Sir H. S. Holt, President — E. L. Pease, Vice-President and Man. Director
E. F. B. Johnston, K.C., 2nd Vice-President

Jas. Redmond — A. J. Brown, K.C. — G. H. Duggan
G. R. Crowe — W. J. Sheppard — C. C. Blackadar
D. K. Elliott — C. S. Wilcox — John T. Ross
Hon. W. H. Thorne — A. E. Dyment — R. MacD. Paterson
Hugh Paton — C. E. Neill — G. G. Stuart, K.C.
Wm. Robertson — Sir M. B. Davis

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E. L. Pease, Managing Director
C. E. Neill, General Manager — F. J. Sherman, Asst. Gen. Manager
W. B. Torrance, Superintendent of Branches

Branches in every Province of the Dominion of Canada and in Newfoundland; in Havana and throughout Cuba, Porto Rico, Dominican Republic, Costa Rica and Venezuela; Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; St. Kitts, Basseterre; Trinidad, Port of Spain, San Fernando; British Guiana, Georgetown, New Amsterdam; British Honduras, Belize.

LONDON, ENG., OFFICE—Princes St., E.C.

NEW YORK AGENCY—Corner William and Cedar Sts.

Savings Department at All Branches

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP $7,000,000 — RESERVE FUND $7,000,000

PELEG HOWLAND, President — E. HAY, General Manager

HEAD OFFICE . . TORONTO

EXPORTERS

THIS bank offers particularly good facilities in the handling of the banking requirements of exporters. Its strong, foreign connections guarantee the most efficient service.

AGENTS IN GREAT BRITAIN

ENGLAND—Lloyd's Bank Limited, London, and Branches
SCOTLAND—The Commercial Bank of Scotland, Edinburgh, and Branches
IRELAND—The Bank of Ireland, Dublin, and Branches

AGENTS IN FRANCE

Lloyd's Bank (France), Limited

AGENTS IN UNITED STATES

NEW YORK—The Bank of The Manhattan Company
CHICAGO—First National Bank — BUFFALO—Bank of Buffalo
DETROIT—Old Detroit National Bank
SAN FRANCISCO—Wells Fargo Nevada National Bank
and in all other principal centres

UNION BANK
OF CANADA

Established 1865 Head Office, Winnipeg

Paid-up Capital.....$5,000,000 Reserve Fund.....$3,400,000

Total Assets over.....$100,000,000

TO MANUFACTURERS AND EXPORTERS

who are reaching out for greater trade, over broader territory, the Union Bank of Canada offers a comprehensive banking service, complete and efficient. This service not only covers Canada, where we have over 305 Branches, but through the Foreign Exchange Department of our London (England) Office, and the Commercial Information Bureau established at that Branch, it offers valuable assistance to Canadian Manufacturers who are selling Overseas.

LONDON, ENGLAND, BRANCHES:
6 Princes St., E.C. Haymarket, S.W.

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - $4,866,666
Reserve Fund - $3,017,333

Statement to the Dominion Government (Condensed), 31st March, 1917.

LIABILITIES TO THE PUBLIC.

Notes in Circulation	$ 5,430,930
Deposits	52,289,988
Other Liabilities	1,205,354
	$58,926,272

ASSETS.

Cash on Hand and in Banks	$ 9,713,276
Deposit with Government o/a Note Circulation	1,385,694
Government, Municipal and other Securities	13,004,476
Call and Short Loans	5,536,616
Current Loans and Discounts and other Assets	37,240,237
Bank Premises	2,312,121
	$69,192,420

This Bank has branches in all the principal Cities of Canada, including Dawson (Y.T.), and Agencies at New York and San Francisco in the United States. Agents and Correspondents in every part of the world.

Made in Canada

Canadian Manufacturers using the best kind of Stationery specify

Rolland's Papers

Ask your Printer to show you our selection of Bond, Writing and Ledger Papers. There is a line for every use, each one being the best in its class.

WE RECOMMEND

Superfine Linen Record

for your correspondence stationery.

SAMPLES ON REQUEST

The Rolland Paper Co., Limited

HIGH-GRADE PAPER MAKERS

General Offices: 142 St Paul St. West Montreal, P.Q.

Mills at St. Jerome and Mont Rolland, P.Q.

The Merchants Bank of Canada

Head Office - MONTREAL

Capital Paid-up - - - $7,000,000
Reserve Fund and Undivided Profits 7,250,984

BOARD OF DIRECTORS

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K. W. BLACKWELL, Vice-President

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E. F. HEBDEN, Managing Director
D. C. MACAROW, General Manager
T. E. MERRETT, Superintendent of Branches and Chief Inspector

A GENERAL BANKING BUSINESS TRANSACTED

220 BRANCHES AND AGENCIES IN CANADA

Extending from the Atlantic to the Pacific

SAVINGS DEPARTMENT AT ALL BRANCHES

Deposits received and Interest allowed at best current rates

New York Agency: 63 and 65 WALL ST.

The Bank of Nova Scotia

ESTABLISHED 1832

Capital..... $6,500,000
Reserve Fund..... 12,000,000
Total Assets..... Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

UNITED STATES: Boston, Chicago, New York
CUBA: Havana
PORTO RICO: San Juan
JAMAICA: Kingston and 9 other points.
NEWFOUNDLAND: St. John's and 16 other points.

LONDON AGENTS:
The London Joint Stock Bank, Limited

With its widespread system of branches and established connections in Foreign Countries this Bank is especially well equipped to handle the accounts of exporters.

CORRESPONDENCE SOLICITED

General Office: Toronto, Canada

H. A. RICHARDSON, General Manager

THE POPULAR PAPER

Bell-Fast Bond & Bell-Fast Ledger Paper

Has Gained This Prestige By Comparison

ASK YOUR PRINTER TO GIVE YOU SAMPLES AND PRICES OF BELL-FAST BOND & BELL-FAST LEDGER PAPER AND COMPARE WITH OTHER PAPERS

THIS WATERMARK 

GUARANTEES QUALITY

We have an exceptional booklet proving the popularity of Bell-Fast Bond and Bell-Fast Ledger Paper, a copy of which we will gladly send you on request.

Howard Smith Paper Mills, Limited, Montreal

CANADIAN NATIONAL EXHIBITION

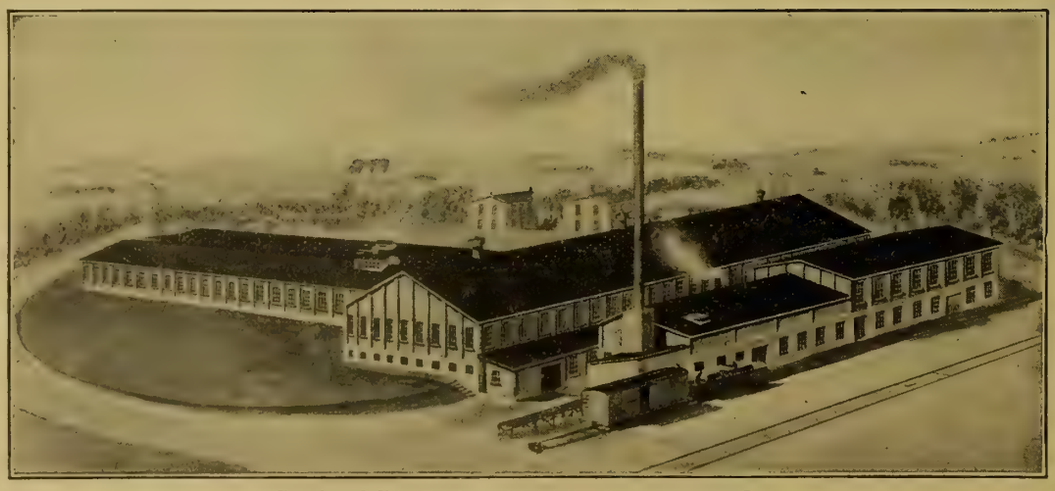
1867 Canada's Jubilee Year 1917

Space is now being allotted in the various buildings devoted to manufacturers. Early enquiries indicate an exceptionally heavy demand for accommodation in all departments.

FOR EXHIBITORS WHO HAVE NOT SECURED THEIR SPACE **IMMEDIATE ACTION IS ADVISED**

Dates are—August 25th to September 10th.

"WORLD'S LARGEST ANNUAL EXPOSITION"



Coating Mill, Barber Division, Georgetown, Ont.

The Largest and Best Equipped Mill in Canada for the Coating of Paper.

"Maple Leaf" "Beaver" "C.A." Coated

Insist on these Brands being used in your Catalogue

PROVINCIAL PAPER MILLS CO., Limited

Toronto Office: Telephone Building. Private Exchange Adelaide 1986



Canadian WOOD Turpentine

A very superior solvent and a high-grade diluent

Made in Canada from Canadian woods

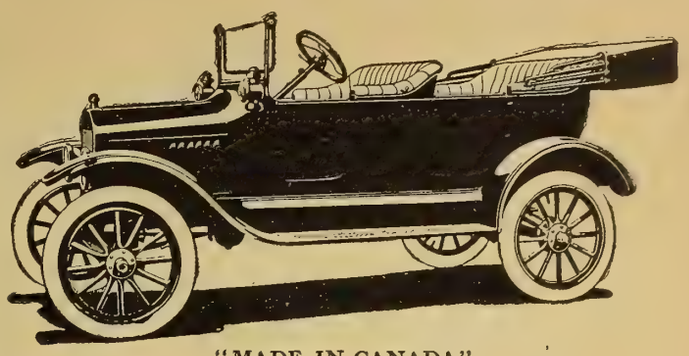
BY

BROWN CORPORATION

Mills at La Tuque, P.Q.

Sales Office at Portland, Maine

Write to our Sales Office for price



"MADE IN CANADA"

The 1917 Ford Touring Car

$495

f.o.b. Ford, Ont.

BUSINESS and professional men find this car indispensable, as it is so dependable and economical. It broadens their field of business activity and returns big dividends on the investment. The Ford is the popular business car.

Ford Motor Company of Canada
Limited
FORD - ONTARIO

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,
188 Yonge St., Toronto

BEAVER BRAND

MADE IN 

CANADA

"BEAVER BRAND" METALS

QUALITY AND SERVICE

BROWN'S COPPER & BRASS ROLLING MILLS LIMITED

General Offices and Mills

New Toronto, Canada

CARBIDE



There are reasons why Canadian Carbide is in demand.

First—The quality and price are right.

Second—The Company backs every Package.

Third—The organization gives you prompt attention.

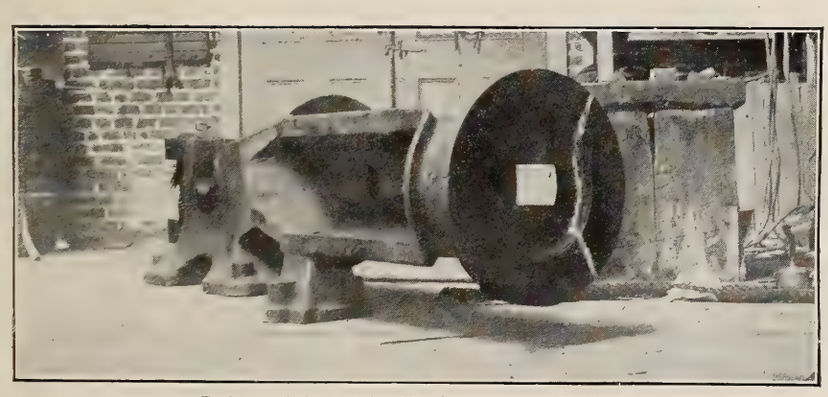
ORDER DIRECT

Canada Carbide Company, Limited

MONTREAL - CANADA

Works:
Merritton, Ontario
Shawinigan Falls
Quebec

Ask for the GREEN Drum



Broken cylinder reclaimed by Oxy-Acetylene Welding.

The High Cost of Machinery Maintenance

can be reduced 75 per cent. with the use of

OXY-ACETYLENE WELDING and CUTTING EQUIPMENT

RECLAIM BROKEN CASTINGS

Repair Broken Machinery—
at a fraction of the cost of replacement

THE APPLICATION OF THE PROCESS

in your plant unlimited.

The investment small. The saving enormous.

"SERVICE FIRST." Be protected in your requirements by the only organization of its kind in the world, manufacturing in Canada complete equipment of proven unequalled efficiency—Oxygen, Acetylene, Gases, Supplies, every requisite for the successful application of the Process. Employing Expert Efficiency Engineers, "At Your Service."

WHAT YOU REQUIRE

An ideal portable Outfit comprising Blowpipe, Gas Pressure Regulators, Tubing, is operated in conjunction with Oxygen and Acetylene Gases supplied in loaned Cylinders, obviating the necessity of investment on the part of the Consumer. Complete equipment weighs less than 300 lbs., and by opening of valve is ready for instant use. The cost (approx. $130.00) is very often covered by saving effected on one or two jobs.

L'AIR LIQUIDE SOCIETY

PIONEERS OF THE PROCESS **FACTORIES THE WORLD OVER**

TORONTO **MONTREAL** **WINNIPEG**

Article Number Two

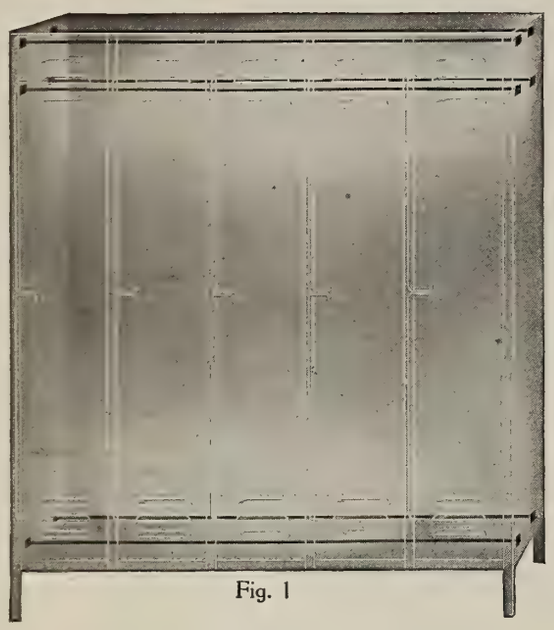


Fig. 1

Consider the effect of these Six Through Bolts!

Lockers are made of a combination of Sheet Steel Parts. In Ordinary Locker Construction these parts are bolted together with a number of small bolts. MEADOWS' LOCKERS are built this way, but, in addition, have Six Through Bolts which run from end to end of the battery and tightly bind the parts into one solid structure. This construction costs us more money, but—

YOU GET THE BENEFIT

This is absolutely a "MEADOWS" feature. No other lockers have this extra.

Our Catalog No. 9 will tell you more

The GEO. B. MEADOWS, Toronto Wire, Iron and Brass Works Company, Limited

479 West Wellington St. TORONTO, CANADA

THE CANADIAN BRIDGE CO., Limited

WALKERVILLE, ONTARIO

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and Structural Iron Work of all Descriptions

DOMINION BRIDGE COMPANY, Limited

Head Office and Works: **Montreal, P.Q.**

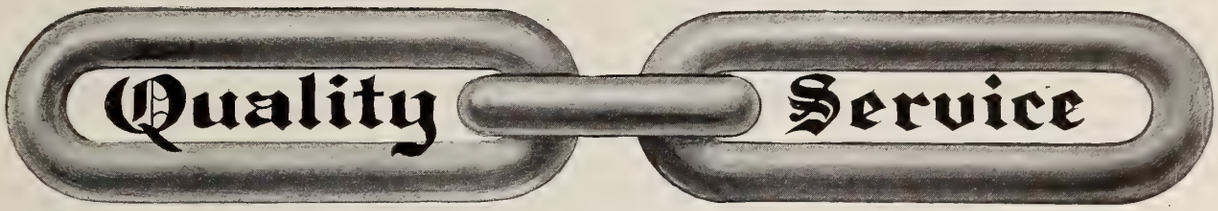
Branch Offices and Works: **Toronto, Ottawa, and Winnipeg**

ENGINEERS, MANUFACTURERS AND ERECTORS OF STEEL STRUCTURES

CAPACITY 135,000 TONS

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all Kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

Large Stock of Standard Structural Material at All Works



INDISPENSABLE LINKS

In the Successful Business Chain

Throughout our entire organization, we recognize and adhere to the highest standards of QUALITY and SERVICE. And upon this—in the future as in the past—the expansion and prosperity of our business depend.

IN OUR MILLS AND FACTORIES

Quality

IN OUR SALES DEPARTMENTS

Service

Believing QUALITY and SERVICE are the indispensable links between producer and consumer, we employ their combined strength to conserve and complete our relationship with all users of Steel and Iron products.

THE

STEEL COMPANY

OF

CANADA

LIMITED

HAMILTON - - MONTREAL

THE CONSOLIDATED MINING AND SMELTING CO. OF CANADA, LIMITED

BUSINESS OFFICE AND WORKS: TRAIL, BRITISH COLUMBIA

EASTERN SALES OFFICE: C.P.R. BLDG., TORONTO

SMELTERS AND REFINERS

Purchasers of Gold, Silver, Copper, Lead and Zinc Ores

TADANAC BRAND PIG LEAD

BLUESTONE, SPELTER AND COPPER

Thomas Robertson & Co., Limited, Montreal

Agents for Quebec and Maritime Provinces

CANADIAN TUBE & IRON CO., LIMITED

MONTREAL, CANADA

WROUGHT PIPE

BLACK AND GALVANIZED
1/8 TO 4 INCH

Thoroughly inspected and tested to 600 lbs. pressure and branded.

Ask Your Jobber for

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Brand

Also BOLTS, NUTS, RIVETS—All Kinds

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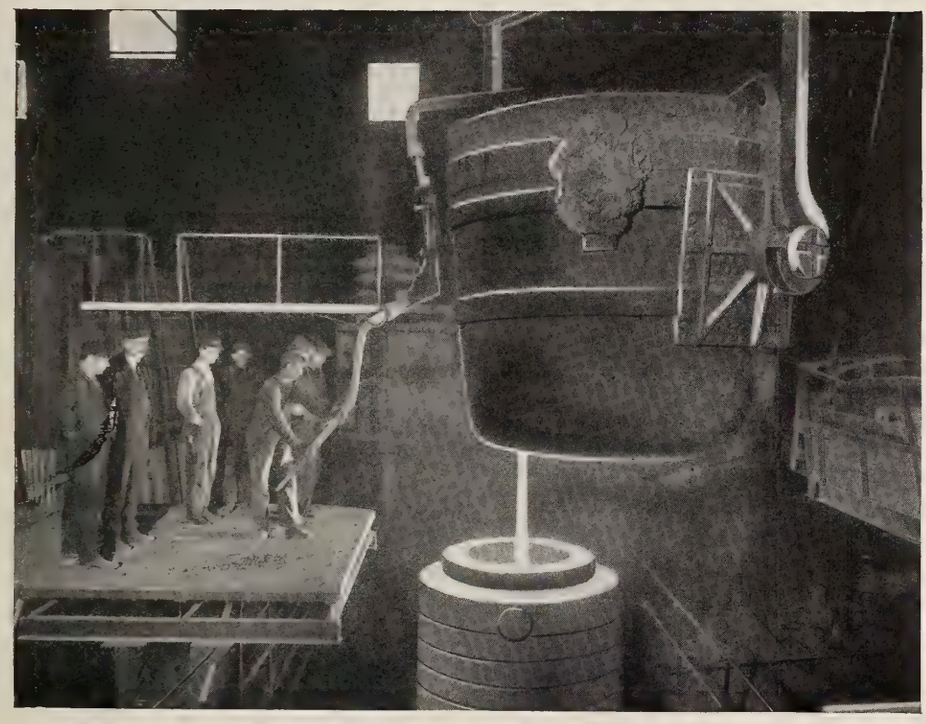
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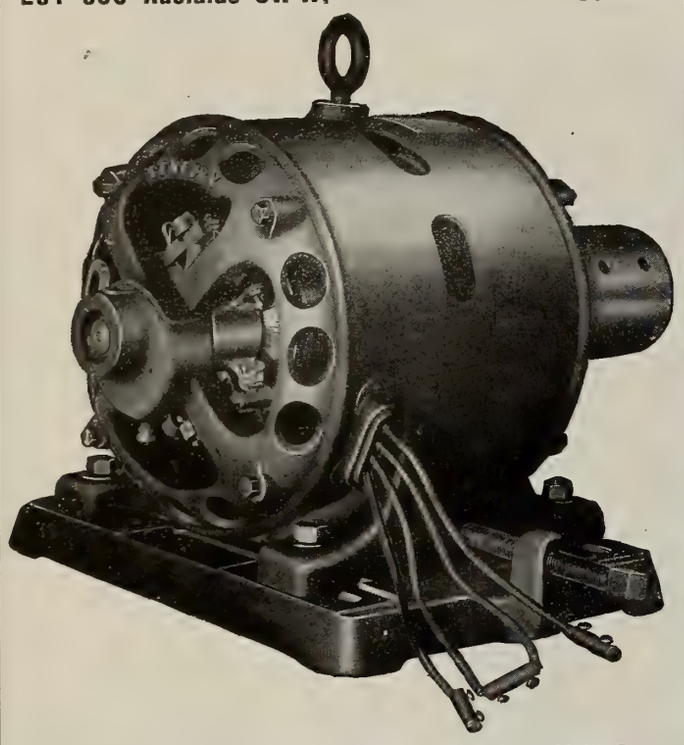
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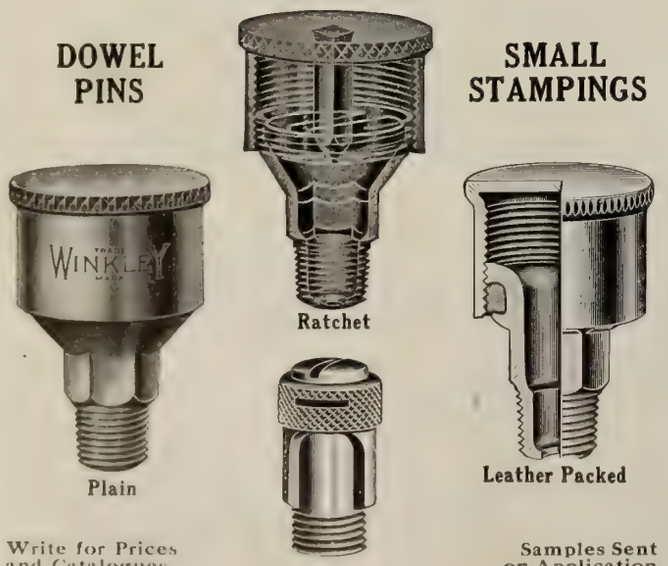
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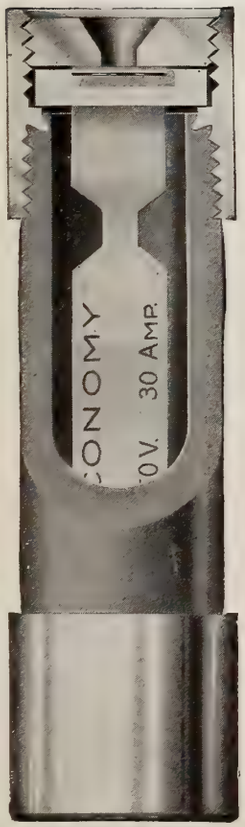
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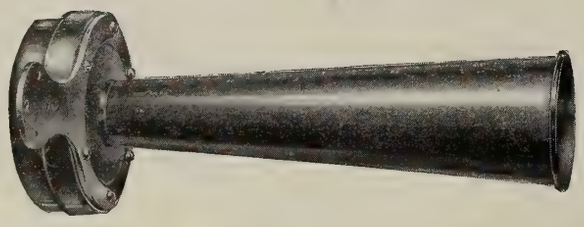
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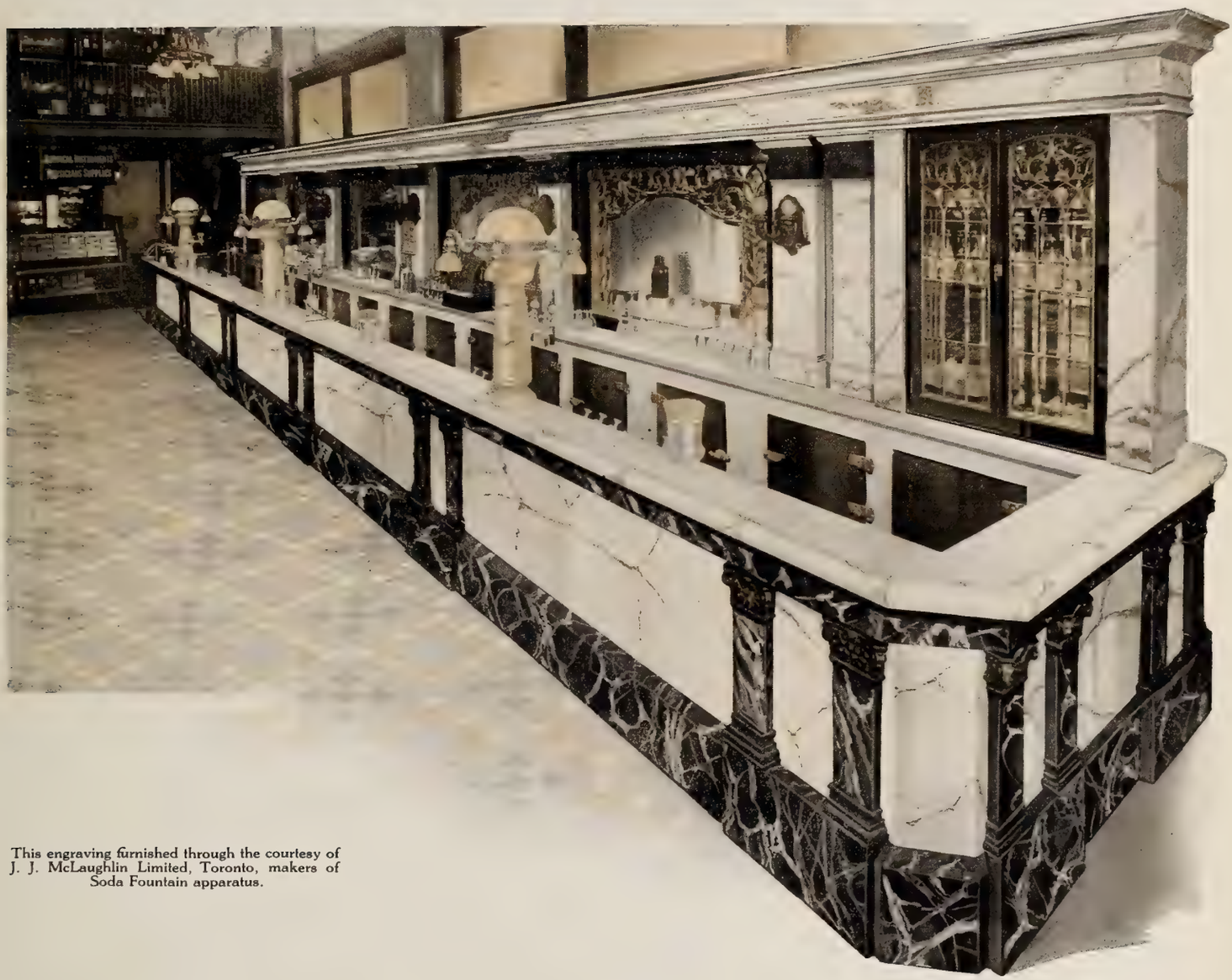
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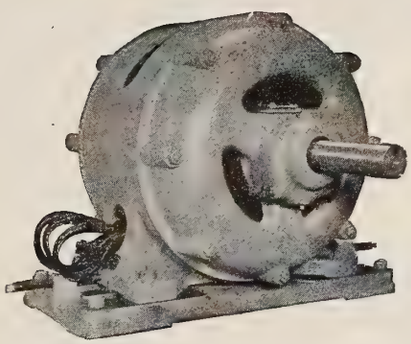
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ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVIII. TORONTO, MAY, 1917 No. 1

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

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The 1917 Convention.

THE summons to members of the Association to attend the annual general meeting at Winnipeg on June 12, 13, and 14, has gone forth and, in the words of the President, it should be considered by every member as no less than his duty to attend the meeting and take his full share of responsibility for deciding the important policies that will come up for discussion.

President Cantley is right when he contends that the time is long since passed when members can afford to content themselves with merely a review of work that has been attempted and results accomplished. The time has arrived for constructive effort. Canada is approaching one of the most critical periods of her existence, a period bristling with difficulties, caused by the necessity of re-adjusting production from a war to a peace basis, and it is imperative for business men to bring united counsels to bear on an effort to anticipate and solve the problems that lie before the country.

We are one year nearer the termination of the war, points out President Cantley,—one year nearer the time when the country must decide what policies she will adopt to hasten her economic recovery and promote her national welfare. If the manufacturing interests are to have a voice in shaping these policies, the time to speak will be at the approaching meeting.

The Greater Production Campaign.

WITH the efforts of those agencies which are striving to enlarge the country's food production this year, we are in hearty sympathy, and especially do we commend the proposals of those who would persuade town and city dwellers to go to the assistance of the farmers in the emergency which is upon us. At the same time we believe that as a first and necessary step special endeavors should be made to have men experienced in agricultural work volunteer for this service. There are many men living in urban centres to-day who, for various reasons, have left the farms. Their assistance would obviously be of far greater value to the farmers than that of inexperienced and possibly physically unfit citizens.

This point is brought out in a circular recently addressed by the Executive Committee of the Association to the manufacturers of the country. After pointing out the pressing need for increased production, the circular goes on to say:—

"Members of the Canadian Manufacturers Association, as employers in the aggregate of probably a quarter of a million men and women, are in a peculiarly favorable position to render valuable aid if they will only do so. Among their employees there must be a great many who were brought up on the farm, and who could now most effectively serve their country by returning to the farm, even if only for short intervals at seed time and harvest. It is recognized, of course, that anything that is done in that direction must be done voluntarily; the employer must be willing to release his men for such times as they are required; the men on their part must be willing to make the change as their contribution to the cause of freedom.

"It is earnestly recommended by your Executive Committee, therefore, that you give immediate and serious consideration to the possibility of sparing some portion of your staff for this pressing work. The Committee fully appreciate the fact that in some lines factory help is already all too scarce; they also recognize that the materials some

manufacturers are producing may be just as essential to the prosecution of the war as food. All they ask of you is to weigh the matter carefully with a mind single to the best interests of our common cause, and then do the best you can.

"The procedure suggested is to make an immediate canvass of your working forces, with a view first to ascertaining the names of those who have had farm experience, and next the names of those in that class who would be willing to return to the farm temporarily, say for a month now, and a month during harvest. As a means of placing such men quickly in touch with near-by farmers who could use them, you are asked to forward their names and addresses to the Director of National Service for your District (see list below), who will gladly do what is needful.

"It may sometimes be found that men who have had farm experience, and whom the manufacturer could spare for a time, will be reluctant to make the change because of the wage sacrifice it would involve. Where that difficulty arises, it may perhaps be overcome by a direct appeal to the man's sense of patriotic duty. I am desired to state that some manufacturers, from a keen appreciation of the importance of this movement, have adopted the plan of equalizing wages for the first employees up to a certain number who volunteer for farm work; that is to say, they undertake, for a period of two months, to make up the difference between the wages paid on the farm and the wages that would have been earned in the factory. If this were done by employers generally, it would probably solve this year's farm labor problem very effectually, and serve the double purpose of increasing our food supply and adding to the general prosperity of the country, in which manufacturers, of course, would share. The Committee do not urge such action upon you; circumstances in your case may make it impossible or impracticable. But the Committee do appeal to you to lend your best efforts towards helping the farmer to help his country and his Empire, firm in the hope that you will respond according to your means and your ability."

Development of Industrial Research.

THERE is a strong concensus of opinion among persons engaged both in science and in industry that a special need exists at the present time for new machinery and for additional State assistance in order to promote and organize scientific research with a view especially to its application to trade and industry.

It is well known that many of our industries have, since the outbreak of war, suffered through our inability to produce at home certain articles and materials required in trade processes, the manufacture of which has become localized abroad, and particularly in Germany, because science has there been more thoroughly and effectively applied to the solution of scientific problems bearing on trade and industry, and to the elaboration of economical and improved processes of manufacture. It is impossible to contemplate, without considerable apprehension, the situation which will arise at the end of the war unless our scientific resources have previously been enlarged and organized to meet it. It appears incontrovertible that if we are to advance or even to maintain our industrial position, we must as a nation aim at such development of scientific and industrial research as will place us in a position to expend and strengthen our industries and to compete successfully with the most highly organized of our rivals.

The difficulties of advancing on these lines during the war are obvious and are not under-estimated, but we cannot hope to improvise an effective system at the moment when hostilities cease, and unless during the present period we are able to make a substantial advance we shall certainly be unable to do what is necessary in the equally difficult period of reconstruction which will follow the war.

Immediately on the appointment of the Government's Advisory Council for scientific and industrial research, the Council issued questionnaires to the manufacturers, the technical societies, the various Government departments, and the universities of the Dominion, asking for information with reference to the laboratories and various other agencies of research now in operation in the Dominion.

In order to develop in Canada a body of men who have been thoroughly trained in science and its application to industry, such as that which has aided so greatly in the industrial development of Germany in recent years, the Advisory Council wisely recommend the establishment of a series of studentships and fellowships in our universities and technical schools, which will be given to men who have completed their regular course of study and have displayed a special aptitude for scientific research. These will enable such men to pursue a course of advanced work at college for a further period. Arrangements will also be made by which men after graduation will be placed in one or other of the great manufacturing establishments of the Dominion where they will continue their training under the conditions of actual commercial practice. They will thus be fitted to aid in the development of the industries of the Dominion.

In addition to these broad general movements for the advancement of our industries, the Advisory Council has decided to examine carefully a number of specific projects which have been submitted to it and which appear to give promise of yielding valuable results.

How to Secure Benefits of Research.

AFTER the war Canada will be saddled with an unparalleled debt, which the country must meet. The development of agriculture is only one of the departments requiring the serious attention of the country. The only way to meet the situation confronting the country is that its leaders of industry shall utilize the country's resources, reduce existing waste, introduce new classes of industries,

utilize new materials, and combine scientific knowledge and industrial operations. The advantages obtained by Germany, and also Sweden, by means of her educational and technical schools and scientific bureaus are now fully recognized.

In order to immediately secure the benefits of industrial and scientific research, the Toronto Branch of the Canadian Manufacturers Association has inaugurated a vigorous movement to bring the industries of the Province of Ontario into line. With commendable zeal Mr. Thomas Roden, Chairman of Toronto Branch, has arranged the various industries into trade sections which will hold meetings to consider the problem peculiar to each. Professor J. C. McLennan, Ph.D., a member of the Advisory Council, has rendered most valuable service in this connection by delivering a series of addresses setting forth the aim of the Government and the practical advantages to be obtained by the industries. In order to encourage the Government to establish a branch bureau in Toronto as the centre of Canada's leading industries, these trade sections undertake for a period of five years to contribute substantial sums towards the expense of organizing and maintaining an industrial and scientific research bureau in Toronto for the solution of manufacturing problems and for the scientific development of the industries on the understanding that the Government shall contribute a like sum and provide the accommodation and equipment.

It is also proposed to form in Toronto a library of the publications of all the scientific societies of the world which will be of very great value to workers in science.

It is recognized that from economical and geographical considerations the City of Toronto and its associated contributary districts is marked out as a region of intense prospective industrial activity. Its railways, both steam driven and electric, together with its vast available resources in electric power, indicate very clearly that it is peculiarly well suited for the location of numerous and extensive industries. These industries will require scientific guidance and advice, and an organized scientific basis for the economical production and manufacture of their products. To meet this situation the Toronto Branch aims at promoting in every way available the alliance between science and industries and the advancement of original scientific and industrial research. Briefly, it aims at taking from industrialists perplexing manufacturing problems and by the application thereto of contemporary science, working out practical commercial solutions of these problems.

It is gratifying to find that at its inception the project of industrial and scientific research has secured the hearty support of the leaders of industry. It means that many preliminary difficulties have been successfully overcome and that manufacturers can now move forward united and confident of the ultimate success of the local movement.

A Fallacious Argument.

SPEAKING the other day to an assemblage of women workers in the City of Kitchener, Miss Laura Hughes, a young lady who seems to believe she has a special mission to right all the economic ills of the day, is reported to have told her auditors that she regarded it as more patriotic, under existing conditions, to buy goods manufactured in the United States than to pay the same price for goods made in Canada.

Why was it more patriotic? Because, forsooth, the duty on the imported article went into the Dominion treasury, whereas, in the case of the Canadian-made article, the equivalent went into the pocket of the manufacturer.

It is scarcely worth paying attention to such a childish piece of reasoning were it not that some superficial thinkers might be inclined to swallow the argument holus bolus. Miss Hughes has, however, built up her contention on the most fallacious of foundations. Had she premised that every article in question was made of materials, produced in their entirety in Canada; that these articles were manufactured in plants equipped with machinery every particle of which was turned out and put together in Canada under Canadian patents; that the labor employed in their production was not more highly remunerated than labor in similar plants in the United States and that all other costs entering into the manufacture, transportation and sale of the aricle were not greater than across the line, then one might be willing to hear her farther.

But anyone, who pauses a moment to think, knows very well that the two cases cannot be placed for comparison on common ground. Into practically every manufactured article made in Canada there enter ingredients on which the manufacturer has had to pay duty to the crown. Much of the machinery used in manufacturing has been subjected to taxation. All these imposts enter into the cost of production and are assuredly as much a patriotic contribution as are the duties paid by consumers on articles made in the United States. Miss Hughes is doing rank injustice to Canadian manufacturers when she overlooks the way in which they are contributing to the national treasury through these channels and her assumption that costs of manufacture and distribution in the two countries are the same is most unreasonable.

Incidentally, it was surely an extraordinary proposition to lay before an audience composed, presumably, of women engaged in manufacturing Made-in-Canada goods. To persuade them that the people who were buying their product were by implication acting unpatriotically was indeed the height of irony. If to buy Made-in-Canada goods is unpatriotic, then what a crime it must be to manufacture them.

Peace and the Steel Trade.

ONE of the most intricate speculations of the day concerns post-war developments. The world is travelling swiftly forward through the bewildering war clouds of the present towards a future, whose features no man can with accuracy forecast. Everybody must be interested in the problem of what lies ahead, for after all, whether the war ends with 1917 or drags on through 1918, this period of reconstruction is comparatively near at hand.

An interesting contribution to the increasing volume of forecasts on after-war happenings and tendencies was made the other day by Samuel Armstrong Benner, general manager of sales of the American Steel Export Co. We can afford to consider with respect the views of so experienced an authority in the steel business as Mr. Benner and, as the steel industry in Canada has been developed to considerable proportions during the war, it is of importance that its future, in common with that of the United States industry, should receive careful attention.

After pointing out that the steel business of the world has been practically handled by two great districts—the American and the European—Mr. Benner showed that since 1900 the tonnages sent overseas to the non-producing countries from the United States have steadily increased, and for some years past they have constituted a perceptible market factor. At the same time Europe's share of the neutral trade, prior to the war, was very much more than that of the United States.

The insistent demand for iron and steel in 1915 compelled the building of much additional steel-making capacity. Between the outbreak of war and January 1, 1918, the new "capacities" in gross tons of ingots per annum will amount to 17,500,000 tons, the term "capacities" meaning possible outputs when the controlling factors, such as full order books, plentiful railway equipment, absence of labor troubles, etc., are all favorable.

On July 1, 1914, the "capacities" of the steel-making countries of the world in gross tons annually were approximately 84,250,000 tons, of which 37,000,000 tons were in the United States and 1,200,000 tons in Canada. Adding the new capacities the United States will have on January 1, 1918, 18,000,000 tons and Canada 2,100,000 tons. For the first time in history, during the latter part of the present year the world's yearly ingot capacity will reach 100,000,000 gross tons, of which between 25 and 30 per cent. is being devoted to war purposes.

The great European district will control a total ingot capacity of over 50,000,000 gross tons per annum after the war, of which over 10,000,000 gross tons can participate in overseas international commerce. In comparison the United States will have 45,000,000 gross tons capacity.

Prior to the war, the great American and European districts were able to deliver iron and steel products to their respective seaboards at about the same cost per ton. The American producer overcame his higher labor rates by a more elaborate mechanical plant equipment, which increased the output per man, and his longer railroad hauls by much larger freight car units, thus reducing the per ton mile freight costs.

The European district considered collectively as one great and formidable competitor, has one tremendous advantage over the United States in the control of an extremely large percentage of all the freight-carrying boats in the world. Before the war, our small percentage of the overseas non-producing markets was due somewhat to this lack of boats on our part. It is not safe to rely largely on our competitors' boats for the carriage of our freights. How much the lack of boats will handicap us after the war cannot be forecast, but it certainly will prove a disadvantage. Our position as regards boats is being bettered. The exceedingly high profits obtainable from ocean transportation during the war have caused the establishment of new ship building plants along both the Atlantic and Pacific seaboards, and have stimulated ship building on the Great Lakes. Many of the new boats now building are for foreign owners; at the same time a large number of them will fly the American flag.

After the war our capacity for ship building will be three or four times what it was before the war. The application of American methods to ship building, especially the standardization of the boats, and the speed of the manufacture, under our new conditions of large outputs, will undoubtedly enable us to produce boats at costs comparing fairly well with those elsewhere. As a whole, the outlook for our merchant marine is better than it has been since before the Civil War. The peculiar conditions now confronting us, both political and industrial, caused by the war, are bringing all sections of the country to a correct realization of the importance of a great merchant marine operating under the American flag, and the outlook is hopeful for an amelioration of our present harsh marine laws.

Offsetting our lack of a great merchant marine, a factor considerably in our favor will be the increased cost of all manufacture in Europe. This will be due to the much higher taxation that will be required to take care of the immense government loans caused by the war, the much higher rates of interest that will be caused by the scarcity of money, and the much higher level of labor rates that will undoubtedly prevail. On the face of it, everything in Europe after the war will cost much more than before the war. Great Britain now is collecting a primary income tax of 25 per cent. of the net profits of all business. If this high rate of taxation continues after the war, as is very likely, a British steel plant, for example, that netted on an average before the war a profit of $10 per gross ton on its ingot production, which would be a conservative estimate, must pay an income tax of $2.50 per gross ton of ingots. Looking at the situation broadly, the great European district will probably find its ingots cost increased by $3 or more per gross ton. This increased cost will tend to make the great European district not so formidable a competitor in the non-producing markets as formerly.

For over two years, the United States has occupied the unique position of being the only country able to supply iron and steel for the international markets. In consequence, buyers abroad found it necessary to

come to this country. These buyers bid for our steel, and the situation was so radically in our favor that we have been able to compel payment in this country for practically all of these purchases. This unusual situation will not much outlast the war. After the fighting has ceased, the great European district again will be in position to supply the overseas markets. The United States then must again meet its competition and must again accept payments abroad.

While the non-producing markets have been able during 1915 and 1916 to take only about 5,000,000 gross tons of the various finished forms of steel per annum, for the 10-year period prior to the war, from the best estimates available, they consumed yearly from 7,500,000 gross tons in a "bad" year to 15,000,000 gross tons in a "good" year. To supply this demand, the great European district used from 25 to 40 per cent. of its capacity.

Due to our unique position, the United States is the only country that has been able to resume normal repair and extension construction. By the end of 1917 we will have had over two years of such work. All other countries, including the non-producing markets, are behind by several years with their repair and extension programs. To make up for lost time, we may expect an era of constructive activity after the declaration of peace, not only in Europe, but also in the non-producing markets. Iron and steel will be required, furthermore, to replenish stocks throughout the world, which today are practically non-existent.

When peace comes, bringing with it a cessation of the present enormous demand for steel for war purposes, prices will recede toward the normal and we may then expect the following:

1. Some demand from Europe itself for quick reconstruction purposes. This demand will not be proportionately great, nor for long.
2. Further constructive work in the United States.
3. Replenishment of stocks everywhere.
4. Abnormal constructive activity in Europe, and the non-producing markets, to make up for lost time.

During 1916 and 1917 the United States will have consumed in domestic business approximately 31,000,000 to 32,000,000 gross tons of ingots per annum, making these two years the greatest in this respect in our history. While the large sums of money now being accumulated by the United States will continue to seek investment after the war, thus making comparatively easy the financing of new work, not only at home, but also abroad, it is extremely doubtful if we shall need in any one year for domestic consumption over 40,000,000 gross tons of ingot capacity per annum for the 5-year period after 1917. Such phenomenal domestic consumption still would leave unemployed 8,000,000 gross tons of ingot capacity per annum, or 6,000,000 gross tons of finished steel. A consumption at home of 32,000,000 gross tons per annum would leave unemployed 16,000,000 gross tons of ingot capacity, or 12,000,000 gross tons of finished steel.

As an estimate, we shall likely be glad to use 10,000,000 gross tons of capacity per annum for export in some form or other during the 5-year period beginning with 1918. If there should be a slackening at home in constructive work coincident with the cessation of the war demands, it will be difficult to operate comfortably without considerable business from the non-producing markets. This brings plainly before us the importance of such trade. Domestic demands may not be sufficient to employ a good percentage of capacity, and it is only prudent business strategy to make sure of getting as large a share of outside business as possible. The great European district will want from us only some materials that we can deliver quickly, and will call on us for such deliveries only until that district is again operating without restriction. We may expect the European makers then to reach out for the non-producing markets as vigorously as ever.

Obviously, one of the important problems now before the iron and steel trade of the United States is to perfect instrumentalities for getting and holding a very large share of the overseas non-producing markets. We began to export steel overseas in the late nineties. In general our policy has been aggressive only at times. Usually we simply have met competition from Europe. In consequence, our share of this business was comparatively modest. We shall probably find it necessary to change our tactics altogether, we setting the price that Europe must meet instead of Europe setting the prices that we must meet. Our own country was able to consume a very large proportion of our output, but with the 30 per cent. increase in capacity that we shall have in 1918 as compared to 1914, the situation seems quite different,

The United States Steel Corporation, founded early in 1901, and ever since controlling about one-half of our total steel-making capacity, has made the only organized widespread effort for export trade. Prior to the war even it was content if 10 to 15 per cent. of its capacity was devoted to such business. The independents have made only spasmodic efforts to get foreign trade. A considerable percentage of our outside business has been with Canada, but this trade, due to the proximity of Canada to the United States, is really local business. Furthermore, it must not be forgotten that by Jan. 1, 1918, Canada will have increased its ingot capacity by almost 1,000,000 gross tons per annum, and therefore will be much more independent than before the war.

Many special problems are found in connection with foreign business which are somewhat different from those involved in domestic trade. Most of these, however, can be solved by the establishment at proper locations throughout the world of well equipped sales offices to bring us in close touch with the ultimate buyer. This is the first step in securing the business. We must go direct to the buyer instead of trusting that he will place himself in touch with us by some means or other. Without well organized means for obtaining inquiries. we cannot hope for many orders. Such offices provide permanent channels between the buyer and the maker, so that accurate information can be expeditiously transmitted from one to the other. By means of these channels most of the problems can be solved, as most of the troubles that arise are due to a lack of a clear understanding between the buyer and the maker. The United States Steel Corporation already possesses such sales offices abroad. The independents, however, should address themselves to the perfecting of connections if they wish to obtain their share of the foreign trade.

MANUFACTURE OF MUNITIONS IN CANADA*

And the Permanent Assets to Canadian Industry Resulting Therefrom

By COL. DAVID CARNEGIE, M.Inst.C.E.
Member and Ordnance Advisor, Imperial Munitions Board

IN September, 1914, when General Sir Sam Hughes undertook the first order for shrapnel shells, Canada's capacity to produce shells amounted to 340 18-pounder shrapnel shells per week. These were made at the Dominion Arsenal, Quebec. The capacity of Canadian factories to-day approximates 400,000 18-pounder shrapnel complete rounds per week, including cartridge cases, primers, fuses and propellents. In addition to this amazing output there is a weekly capacity in Canada for nearly 400,000 high explosive shells, ranging in sizes from 18-pounder to 9.2-in., making an approximate total weekly output of 800,000 shells. This large output, along with other supplies made independently, requires about 25,000 tons of steel per week, 2,500 tons of brass, 750 tons of copper, 250 tons of zinc, 1,500 tons of lead, 200 tons of antimony, 150 tons of resin, several tons of ferro-molybdenum, and about 1,300 tons of explosives (including 500 tons of cordite, 500 tons of trinitrotoluol, and 300 tons of nitrocellulose powder).

Over 300,000 boxes are required for these shipments per week, and about 3¾ million lineal feet of board are used in making these boxes.

The Value of the Products.

The weekly value of these products can be understood only by people who have learned to think in millions. The total value of orders for munitions placed in Canada approaches $800,000,000, and the value of munitions shipped to date is close upon $500,000,000.

Efforts of Manufacturers and Employees.

General Sir Alexander Bertram, whose name will be ever remembered as Chairman of the Shell Committee, could tell you better than I can of the strenuous efforts made at the outset to obtain suitable plant, efficient machinery and accurate tools for factory operations. Greater still, however, was the struggle in securing and training labor for the manufacture, treatment and subsequent machining of the materials. Records of these early accomplishments are worthy of the historian's pen.

The greatest of all progress, however, has been made perhaps by the workers themselves. The spirit of comradeship which permeated the employers was reflected in the efforts put forth by the workers. By diligent work many of them acquired a skill in the use of gauges and in the manipulation of machines and tools, which has surpassed their own expectations. It is a fact that to-day the Canadian workers have become so skilled in the art of shell-manufacture that their speed and quality of output would arouse the admiration of the oldest and most capable machinists in England.

Amount and Value of the Plant Employed.

Looking again at the magnitude of the munition work in Canada to-day, we see 650 factories engaged in 144 towns scattered throughout every province of the Dominion, except Prince Edward Island. Cities as far apart as St. John's, Newfoundland, and Victoria, B.C., a distance approximating 4,500 miles, are contributing to the output. Manufacturers from almost every industry in Canada have turned their attention to the production of munitions, and it is gratifying to record that few of them have failed in producing the standard of work required.

Some idea of the amount of plant and machinery installed can be obtained when it is remembered that apart from the large increase in the number of steel-making furnaces which have been installed since the war commenced, there are 26 contractors making shell forgings, with a total forging press capacity of 61,000 tons. This tonnage is represented by 162 forging presses, the largest having a pressure of 1,500 tons, and the smallest 200 tons. In order to feed these presses with the steel for forgings, 200 furnaces have been built. The presses are driven by 120 sets of pumps having a total electric motor capacity of 21,000 h.p. The approximate value of shell forging plant machinery installed is estimated at about $5,000,000.

Coming to the plants for the machining and assembling of shells and the manufacture of component parts, there have been installed over 18,000 machines and 90,000 h.p. to drive them, the estimated cost approximating $35,000,000.

Gauge Production.

One can hardly mention this subject without being reminded of the almost insuperable difficulties which were presented in the early days of the war in obtaining gauges for munitions. We can never thank the United States manufacturers sufficiently for what they did in coming to our aid at that time. The special skill in making gauges to the limits of accuracy required could not then be found in Canada. To-day there are at least twenty factories producing gauges in Canada, and while we are not independent of help from the States, some idea of the magnitude of the work can be understood from the monthly bill, which amounts to over $150,000 for new gauges.

During the month of March about 10,000 new gauges and checks were inspected. The usual accuracy called for on a gauge is .0003, and for a check .0001 part of an inch.

An army of over 5,000 examiners are engaged upon the inspection, under the direction of Colonel Edwards and his staff of officers.

National Factories.

Among the many contributing features of successful production to-day, started by Mr. Flavelle soon after he became Chairman of the Imperial Munitions Board, was the creation of great national factories in Canada. In addition to stimulating and developing companies in Canada, he set in operation several national factories for the loading of fuses, the manufacture of gun cotton, acids, trinitrotoluol, acetone, cordite, nitrocellulose powder, aeroplanes and electric steel.

These factories are operated by separate companies, the entire stock of each company being held by the Imperial Munitions Board.

In this connection it is interesting to know that aeroplanes are being made in Canada at about the rate of one per day, and when the new factories are completed five per day are expected.

Organization of Munitions Work.

Time does not permit me to tell of the organization which brought into existence and has maintained, through good and ill report, these industries, nor of the fellowship and comrade-

*Address delivered before the Canadian Society of Civil Engineers, Ottawa, April 26, 1917.

ship, unsurpassed in quality and loyalty, of the devoted workers who have ungrudgingly worked with increasing diligence.

I have wondered, and still wonder, by what measure, or weights, or standards, I could value that quality of administrative genius which could, with a daring unsurpassed in modesty and charm, command some of the best intellects of Canada, as with mesmeric power, to come forth from all kinds of influential pursuits, sacrificing leisure and gain, to work on the Munitions Board. There is some sort of mystic charm —"Piper of Hamelin" power, about our Chairman. He does not smoke either; and I believe he is a prohibitionist, although the records of the Rideau Club show that he likes cider. I often told General Bertram, in the old committee days, that the heavy artistic pipe he had by him was responsible for that gift he possessed of soothing politicians and disappointed contractors.

I am told—I don't know if it is true or not—that Mr. Flavelle went to Lord Shaughnessy and said: "I want your Purchasing Department." "What?" Do you want the railway to stop? You want me to give you the brains of the C.P.R?" I do not know what passed. Lord Shaughnessy did not stop his railroad, and Mr. Flavelle got the brains. Oh, such brains, too! All your dynamic theories of force have been upset. New standards of calibration are required. But that was not enough; our Chairman touches a button in Toronto, or Montreal, and up comes a man from Toronto gifted in the art of doing things without a brass band. Nobody knows from where he taps his genius. The machinery he uses is painfully silent, but he always gets there. He is just responsible for turning out over $5,000,000 worth of work per week, and if you were to meet him you would never know that he had any connection with the Board.

Time forbids, or I should like to tell you of the socialists, radicals, liberals, advanced liberals, tories, ancients and mystics, who gather round our festive board—all having passed the Sunday school tests. I don't know whether secretly or not, Mr. Flavelle examines all his loyal subjects in Butler's "Analogy," Lubbock's "Tact," and Foster's "Decision of Character," but he has made a wonderful selection from high finance, astute commerce, gifted journalism, literature and poetry, all with a charm and harmony upon which Socrates would have delighted to discourse.

But I have wondered still that after the first blush of the romance of munitions work had worn off they were still held with a devotion of lover to sweetheart. I have come to the conclusion that no tie but the tie of loyalty would hold that band of voluntary workers round the hub of the Transportation Building, particularly as the jaded mentality after weary months of high pressure cries out for the golf links.

There is not a department of the Canadian Government which has not come to our assistance when required. To the Mines Branch, the Department of the Interior, the Patents Office, the Conservation Commission, the technical societies, the Advisory Council on Research, and other scientific bodies —to them a great debt of gratitude is due.

The Permanent Assets to Canadian Industry.

Hurrying from these few facts about the output of munitions in Canada, without even touching upon what would be a fascinating subject to you as engineers (I mean the scientific processes involved), and also leaving entirely out of consideration the gruesome purpose in actual warfare for which the munitions are required, I pass on to consider the value of this unholy business as a permanent asset to Canadian industry. I should like to divide the total value of the permanent assets as I view them, into two parts, the first resulting from the standardization of products, the second from the standardization of skill.

The Standardization of Product.

No component part of munitions, however insignificant, has been made or accepted on the old principle of "good enough." Every part has been supplied to drawing and specification, with rigid examination, analysis and test before acceptance.

I think I am safe in saying that there is no industry in Canada which has been occupied in the manufacture of munitions but has passed through a process of refinement which will leave it in a better condition when it returns to domestic pursuits after the war. If you review the great industries in Canada it will be difficult to find one which has not been actively contributing to the output of munitions.

Industries such as the iron and steel; the metals and metal products; refractory materials and fuels; lumber and timber, leather, textiles, paper, chemicals and other minor industries, have called into being processes and plant which could be adapted for munitions and have also added new processes, new equipment and new skill where these were required.

In addition to the employment and adaptation of existing industries for munitions manufacture, entirely new industries have been brought into activity. The manufacture of munitions has given an abiding impetus to the mining and subsequent operations in the production of coal, iron, copper, nickel, zinc, molybdenum, antimony, aluminum and other metals.

The chemical industries have been accelerated by utilizing the waste products of the coke ovens for the manufacture of high explosives. These waste products after the war will be turned by ingenuity and skill into valuable domestic products.

The electro-chemical industries, such as the refining of copper, zinc and lead, have been initiated and will remain as a commercial asset. The electro-thermic processes for the production of ferro-alloys, such as ferro-silicon, ferro-manganese, ferro-molybdenum, aluminum, magnesium and other metals, have produced standardized products.

It has been a costly and sometimes bitter training; but it has been done ungrudgingly and with great patience, and as a result the standard of Canadian products to-day is greater than ever before.

Standardization of Skill.

The widespread knowledge of new processes, involving the scientific study of metals, the flow of materials and their physical, chemical and metallurgical values, has been such that one can hardly imagine it would have been possible for the universities and technical schools of Canada to have provided such instruction in the course of many years which has been crowded into as many months. Every workshop has been a school of training in standardizing this skill. Every factory in which steel is made and forged is now partly or fully equipped with the means for measuring temperatures and intelligence for discovering the value of materials with which they are working. In every workshop in the different provinces of Canada where shrapnel shells are made, the scientific treatment of steel is known. There is hardly a town of any importance in which the use of precision instruments and gauges for measuring shells and their component parts does not exist.

It is difficult to assess the value of this skill to Canadian industry, in which over 250,000 workers have become skilled in the art of such processes and the manipulation of such tools and gauges. It is more surprising still to know that nearly 12,000 women have become skilled in this work. Never in the history of the world has there been such an incentive to acquire such skill for a purpose, of the like of

which our civilization should be ashamed, but which is nevertheless an asset which will be of great value in the peaceful commercial industries for the expansion of Canada.

Contributing Factor in the Standardization of Skill.

The mental processes which have been silently at work developing character while the hands of the workers have been acquiring precision in the use of tools and gauges, are factors in the life of the individual worker which cannot be overlooked. Canada has shown a rare capacity during this great war, comparable in some measure with the vastness of its territory.

I have just referred to the great skill and ingenuity displayed by Canadian munition workers, with the standard of which you have just cause to be proud. But there has been during the past two and a half years a growth of character without which all skill and ingenuity would be soulless. I refer to that moral fibre in the character of the worker which has shown such fine courage and unfailing endurance. This fibrous character has through the ages "transformed the malady of thought into abounding hope." It is this moral fibre which has given courage, energy, patience, and unselfishness to the worn-out workers. It has inspired a quality and amount of inventive genius hitherto unknown in Canada. It has fostered harmony in some measure between employer and employee. It has brought our gentle women into touch with the struggles of the toiler and enabled them to understand and share their burdens. It has dignified labor while ennobling the character of those who have made sacrifices to fill the places of our boys who have "crossed the bar."

One morning recently a mother, while working in one of the munition factories, received news that her boy had been killed at the front. For a moment she was stunned, and had the deepest sympathy of her fellow-workers. Instead of collapsing into grief under the shock and giving up her work, she set her face resolutely and worked with almost supernatural strength. Her employer informed me that she produced more shells that day than on any previous day.

This war, with all its horrors, savagery and sacrifices, has had its ennobling effects, producing absolute and timeless qualities beyond the power of oxidation. Science has discovered no solvent powerful enough for them. They are outside the engineer's specifications and tests. They are engraved on the heart, and beyond the decay of moth and rust. This moral fibre in Canadian industry has provided better conditions in the works and has brought into prominence welfare work of inestimable value. Signs are not wanting that it will increase facilities for the education of the workers and establish a community of interests between masters and men which exalt humanity above self-interest. If my vision of the future is not distorted, this moral fibre in both the employer and employed is going to quicken "man's devouring need of liberty." If awakened Canada, with its vast territory, thirty-one times greater than the United Kingdom, and with its natural resources of almost immeasurable value, is to utilize its possessions, it must shake off the fetters that bind it to systems which are opposed to a full and free industrial, technical and general education of the people.

Professor Henry Drummond has said that "to surround captives with statues and pictures, to offer them that are bound a higher wage, or a cleaner street, or a few more cubic feet of air per head, is solemn trifling. It is a cleaner soul they want, a purer air, or any air at all for their higher selves. To grow up in the complacent belief that God has no business in this great, groaning world of humanity except to attend to a few saved souls, is a negation of all religion." I want to emphasize this valuable standardized product, specified on tables of stone thousands of years ago, and which has been wrought by an unseen hand into the character of the Canadian worker, for I believe it is a fundamental asset which must permeate any real accomplishment. It has been said that "No man will work hard sewing diamonds on tissue paper"; the value of the object of the sacrifice determines the willingness of the individual to pay the cost. This moral quality cannot be purchased by money; it is far outside the money standards; it's a heart quality. If such qualities could be bought by money a few gambles in real estate, or a day's luck on the Stock Exchange might qualify the vulgar, ruthless and immoral. I go back to my country's poet and hear him say:

Nae pleasures nor treasures
Can mak' us happy lang;
The heart aye's the part aye
That mak's us right or wrang.

The Responsibility of the Engineer.

Gentlemen, ours is an honorable profession, one crowded with vistas of research and delights, the like of which even angels might envy. This war has awakened the slumbering forces in the human mind and brought into activity engineering genius unequalled in quality hitherto. Your great waterfalls have been transformed by your skill into the most resourceful agency of power, without which we would have hopelessly failed in reaching the output of munitions named. Your skill has mined, smelted and fabricated the many metals which have proved to be of such value for munitions. The great engineering plants which have been brought into being by your skill are monuments of industry which must not be allowed to rust when this war is over. There is a great responsibility resting on you as engineers and leaders of industrial thought and action. It is greater to-day than ever before in the history of Canada. The opportunity given to you of taking and intelligently using and directing those assets of which I have spoken is of vital importance to Canada's successful industrial development. There is no need to wait for royal commissions; power and authority are vested in yourselves. Nothing will be too great for you if you see your opportunity, and if you have faith in the engineering talent of Canada. The man who was afraid and went and hid his talent in the earth brought forth the most scathing reproof ever uttered.

If I were to venture to suggest a programme for your immediate consideration I would advise you to classify and value the engineering skill of your societies with the object of forming in Canada from their membership small committees of scientific, technical and commercial men, who would be responsible for obtaining from the accumulated reports of commissions and numerous supplies of information stored in government departments and elsewhere, relating to the best standardized processes, assets, equipments and plants for the development of the industry they represented. Each committee would therefore become the recognized source of classified information, to whom manufacturers could with confidence refer for any help and advice required.

If your inventory of classified ability were broad enough to include the fuller issues in developing the standard of products, skill and utilitarianism, I should utilize every willing member of your profession, making committees, say, of members not exceeding three, for the consideration and report of the following subjects:—

1. Industrial, technical and commercial education for our boys and girls before and after leaving the day-school.
2. Classification and valuation of labor.
3. The remuneration and hours of labor.
4. The direction and character of employment in classified industries.

5. The provision of methods for the prevention of unwholesome competition between manufacturers.

6. The provision of definite standards for checking the formation of doubtful companies.

Then, with the central authority you could co-relate the efforts and information of your scientific and industrial committees for a broader policy of universal trade.

By the consideration of some such programme those valuable assets which are now the heritage of the Canadian people will make this country prosperous. Canada has its opportunity to set the pace in the world's industry. Its finances were never better. Last year its exports exceeded its imports by $340,000,000. Its natural resources cry out to you for their development. It is a country in which there is a heritage of wealth far exceeding that with which our youthful imaginations surrounded "Treasure Island." Your efforts in embracing those opportunities will be strengthened by a more complete education of the industrial workers and by a heartier co-operation with the employers.

"A nation," said President Wilson, "is as great, and only as great, as its rank and file." Will you gentlemen see that the rank and file who make this nation follow those lofty standards of education and sacrifices which make life great?

It would be terrible if we missed the way after such a struggle.

There is a great industrial war before us, for which we are unprepared. This might have been avoided if a harmonious, united federation of the world's industrial councils were possible. No doubt the distant future will produce the genius for such an undertaking. Meanwhile we cannot escape the responsibility before us.

Since the war started the eyes of the world have been turned towards Germany. The history of that country, the characteristics of its people and the success with which for years prior to the war they flooded the markets of the world with products, the prices of which became almost a menace to all other manufacturing countries, have inspired a determination by the people of the competing countries to put their industrial house in order to meet all reasonable competition. German militarism will be crushed before the Allies sheathe their swords, but to crush the industrial spirit in the Germans which has made their country prosperous would be to destroy the very spirit we now seek to stimulate in ourselves. The industrial prosperity and triumph which put Germany before the war in the front rank of the world's commerce can never be crushed; indeed, it would be folly to attempt to crush it. The world demands the best from every nationality, and amongst the many lessons this war has taught the nations of the world is the very old and common one, that out of persistent and well-balanced indomitable courage comes the ability which brings success.

Peace is coming. When it is declared, the struggle for industrial supremacy will intensify in the German people. The very qualities of sacrifice, courage, endurance, enterprise and genius which this war has developed throughout Canada and the British Empire, among our allies and our foes, will not by any chance lose their value on the Germans, but, on the contrary, if, as we believe, German military arrogance will be swept away, her industrial classes will, by reason of the opposition to her commerce and trade, struggle to maintain a higher efficiency within her borders. Before many years the world's markets will be flooded again with products at much lower prices than it is even now possible to conceive, with the result that hate and prejudice to German goods will die away before a temptation so strong that the purchasing value of the wage-earning classes will find it necessary to buy in the lowest markets, although the products be from Germany.

One can imagine, judging from the procedure in the past, that since the war began the accumulation of products in Germany, the outlets for which have been closed, will be dumped on the world's markets immediately peace is declared, the new propaganda which these closed years have inspired, the very thrift which privation and sacrifice have demanded from the people will encourage even more than ever the utilization of every form of waste product.

Dr. Fleming, in a paper which he read before the Royal Society of Arts on February 9, 1916, said: "This war is a war quite as much of chemists and engineers as of soldiers and sailors; hence from the point of view of national security alone we must take steps to foster scientific investigation." Gentlemen, I trust that we as engineers shall not have to say in years to come, in the words of Tennyson, when our opportunity has passed:

"It was my duty to have loved the highest,
It surely was my profit had I known;
It would have been my pleasure had I seen."

But rather may we say now, in the words of William Blake, slightly changed:

"I shall not cease from mental fight,
Nor shall my sword sleep in my hand,
Till I have built Jerusalem
In Canada's green and pleasant land."

CLASSES IN FIRST AID.

The Canadian Branch of the St. John Ambulance Association has sent out the following bulletin, addressed to those who may be interested in the formation of classes of instruction in any of the above-mentioned subjects.

A class consists of 30 or less, of one sex (except in Home Hygiene, in which mixed classes are permitted), and as soon as sufficient names have been secured, the services of two doctors shall be obtained, one to conduct the lectures, and the other to examine the class on its completion. Usually these services are rendered free, and such service by the surgeon lecturer makes him eligible for recommendation as an Honorary Life Member of the Association, on his having given four courses gratuitously.

Each member of the class will be assessed a fee to cover the necessary expenses. Roughly speaking the individual cost of the full course of five lectures and examination, including proportion of class fee, text-book, bandage and the issue of certificates amounts to about $1.50. When the number in the class is less than 30 the proportion of assessment may be slightly increased, as there are certain fixed charges, such as the Class fee, and purchase of charts and splints, which have to be met irrespective of the number of persons attending.

Classes are held not oftener than once a week, at a time and place which will be mutually agreed upon, and each lecture and practice should last for two hours. Each class will appoint a secretary, who will be responsible that all fees are paid at the start, that a roll of attendance be kept, and that all supplies are in their place on the night (or day) of the lecture. This officer will report to the honorary secretary of the local centre, if such exists, and if not, to the honorary secretary of the provincial council. On receipt of the fees the examination papers will be forwarded to the examiner.

Any additional information required will be furnished by the officers of the Council of the Province in which the applicant resides, or by the General Secretary of the Canadian Branch, 14-15 Castle Building, Ottawa.

THE EXTRA PROVINCIAL LICENSING ACTS

Provincial Legislation Intended to Challenge the Authority Given to Dominion Companies by their Charters, and to Subject them to a Second Incorporation Fee

By G. M. MURRAY

General Secretary, Canadian Manufacturers Association

COMPANIES and company lawyers have been receiving from departmental officials of the Ontario Government a form letter intended to influence incorporators of companies in favor of Provincial charters as against Dominion charters. This letter, in the form of an article, was recently published in the *Ontario Dominion Public Service Bulletin* and also in the *Credit Men's Journal*. The following quotations from the article will indicate its tenor:

By the decision of the Judicial Committee of the Privy Council, delivered 24th February, 1916, in Bonanza vs. The King and in the Companies' Reference, the right of a Province to incorporate companies having the ability or capacity to do business anywhere is established. For ten years the Dominion has been attacking Provincial rights and has contended that a company incorporated by a Province had no capacity to do business outside the territorial limits of that Province, basing this contention on the provisions of the British North America Act, 1867, section 92, which gives the Provincial Legislatures jurisdiction to legislate exclusively with regard to the incorporation of companies with provincial objects; see section 92, sub-head 11.

Then follows an extract from the judgment of the Privy Council in the Bonanza Creek case, after which the article goes on to say:

The Provinces have a right to tax Dominion companies, and the myth that a Dominion company can go into all the provinces without taking out a license imposed as a condition of the tax which may be levied, will be exploded whenever any Dominion company attempts to contend a properly framed taxing statute making the obtaining of a license necessary.

The decision in the John Deere Plow Co., which is supposed to support the statement that Dominion companies may go for one charter fee into all provinces does not do so, and that decision does not purport to question clear previous authority giving the provinces full powers to taxation accompanied by license and prohibition of carrying on business until license is obtained.

A point which has been kept in the background is that the recent references and the Bonanza case were really attacks by the Dominion upon Provincial rights and not attacks by the Provinces upon the Dominion. If this latter attack were seriously made it is doubtful whether the Dominion has a right to incorporate manufacturing or even trading companies which have strictly provincial objects by merely tacking to the end of their charter the words "and elsewhere in Canada," which the Ottawa Departments have inserted in many of their charters, considering that this would give the Dominion jurisdiction in the case of companies which naturally are Provincial.

To recapitulate, Provincial charters for companies with Provincial objects are legal within their Provinces and also outside. The Dominion charters of the same nature may or may not be legal, and in any case Dominion companies will be liable to taxation in all the provinces, not merely (as in the case of provincially incorporated companies) in Provinces outside the incorporating one, besides which it is much easier, quicker and more satisfactory to obtain a charter locally than it is to send to Ottawa where, if any difficulty occurs, there may be a long and often troublesome correspondence and delay.

The article shows exactly why it has been necessary for the Canadian Manufacturers Association to take up the cause of Dominion companies. The attitude of mind displayed in the article is a striking illustration of one of the sources of difficulty in securing reasonable and workable business and commercial laws. The ordinary business man has little conception of the extent to which the drafting of laws is subject to the whims and motives of departmental officials. The one idea in the mind of the writer of the article who, it may be observed, has had a guiding influence upon the policy of not only the Ontario Government but the Governments of the other provinces in dealing with the subject of company incorporation and licensing, is that it is necessary at all hazards to repel "attacks" upon so-called "provincial rights." Instead of considering what is proper, expedient and right in the interest of business men and the community generally, the prevailing idea is not to allow the Dominion to get ahead of the Province in any matter of jurisdiction, but on the other hand to steal a march upon the Dominion wherever possible. Thus a problem which business men would settle in a perfectly satisfactory manner in a few hours' conference has been made the subject of experimental legislation and litigation in the interest of departmental politicians. Instead of company law being made for companies, companies are compelled to adapt themselves to laws made with a view to the exploitation of rival jurisdictions.

It is of little or no intrinsic interest to manufacturers and other business men whether companies are incorporated by the Dominion or by the Provinces. What is of vital interest to corporations—and the bulk of business is now carried on through the medium of corporations—is that the status and rights of corporations should be definitely determined. It is intolerable that a business corporation should be in uncertainty as to whether it has a status to maintain actions in the courts. It would be inconvenient, to put it mildly, if the status and corporate rights of a trading corporation operating in every part of Canada should be open to question by every Provincial Government and be subject to such terms as the various Provincial Governments might choose to impose. The inconvenience of such a situation, however, is not allowed to weigh against the "will to power" of the Provincial Governments, or, more correctly speaking, certain provincial officials. Hence the extra-provincial licensing and registration Acts which are intended to hamper and embarass Dominion companies to such a degree that, as indicated by the writer of the article in question, they will "prefer an Ontario charter as opposed to a Dominion charter."

The article is headed "Right of Provinces to Tax Dominion Companies"; but the bulk of it is devoted to a defence of the "right" of the Province to incorporate companies. No one has thought of disputing the right of the Provinces to tax a Dominion company, provided the "tax," in the words of the judgment in the John Deere case, "affects a Dominion company in common with other companies." In speaking of the Provincial legislation as a "tax" the writer begs the entire question. The Privy Council expressly held in the John Deere case that the legislation there in question was not taxation legislation but legislation dealing with the status and corporate authority of companies. In other words the attempt of the Provinces is to treat a Dominion company, upon which the Dominion has conferred some of the rights of citizenship, as if it were an alien and could be required to knock at the provincial door for admission. The question which the writer of the article attempts to deal with and at

the same time to evade, is whether it is competent for a province to dispute the corporate authority of a Dominion company to carry on business in a Province without further authorization by way of charter or license or registration from the Province.

The writer of the article unblushingly discloses the real purpose of the type of legislation which was held to be ultra vires in the John Deere case in claiming that "an applicant for an Ontario charter can have all the rights that he needs for an ordinary company; that in the province he has to pay only one fee." The real intention of the extra provincial licensing and registration Acts, which were in question in the John Deere case and in the Companies' Reference, is to challenge the authority given to Dominion companies by their charters and to subject them to a second incorporation fee, and thus discourage applicants from going to the Dominion for their charters, the idea being that incorporation fees are legitimate perquisites of the provincial authorities, and that there is something reprehensible about going past the Province and going to the Dominion for a charter. The very factor which is being held out as a disadvantage of a Dominion charter is the thing which makes the provincial legislation ultra vires and invalid.

If anything further were needed than the comprehensive judgment of the Privy Council in the John Deere case, it would be supplied by the following passage from the judgment in the Insurance Reference:

Where a company is incorporated to carry on the business of insurance throughout Canada, and desires to possess rights and powers to that effect operative apart from further authority, the Dominion Government can incorporate it with such rights and powers, to the full extent explained by the decision in the case of the John Deere Plow Co., 18 D.L.R. 353, (1915), A.C. 330. But if such a company seeks only provincial rights and powers, and is content to trust for the extension of these in other provinces to the governments of these provinces, it can at least derive capacity to accept such rights and powers in other provinces from the province of its incorporation, as has been explained in the case of the Bonanza Co.

The passage refers specifically to Insurance Companies, but at the same time re-states in unmistakable language the principle laid down in the John Deere case, viz.: That it is not open to the provinces to question the corporate authority and status of a Dominion company.

BRITISH FEDERATION IN NORTH AMERICA

An Argument in Favor of the Political Union of Canada, Newfoundland and the West Indies

By a Canadian in the "London Times"

WHEN the war ends plans for the development of inter-Imperial trade and for the political union of component parts of the Empire will necessarily occupy a good deal of attention. In this discussion the possibility of creating a complete political and economic union—in one word, a confederation—of Canada, Newfoundland, and the British West Indies should not be overlooked. Several attempts have been made without much success to establish closer commercial relations between Canada and the British West Indies, and also to bring about confederation, as well as certain tariff arrangements, within the islands themselves. The preferential trade agreement with Canada promoted by Sir George E. Foster in 1912, although it has been of some benefit to the islands, has had only a limited and partial effect. There is some dissatisfaction now in those islands that entered into reciprocity with Canada because those that remained out are receiving the same concessions from the Dominion without granting any concessions in their tariffs. Jamaica, the largest of the islands, influenced largely by fear of retaliation on the part of the United States, did not participate in the reciprocity agreement with Canada.

The results of absolutely free trade between the British West Indies and Canada are indicated by what has happened already. Since 1912 the proportion of Canadian exports to Trinidad has risen from 7.3 per cent. to 13.7 per cent. in 1915 of the total trade, while the exports from the United States have shown a marked tendency to decline proportionately in the same period. But the full benefits of commercial union and the development of reciprocal trade cannot be obtained without political union between the islands and the Dominion. In the first place, the British West Indies, not without reason, fear that to grant commercial preference to Canada might provoke retaliation from the United States. No less than 60 per cent. of the exports from Jamaica for example, go to the United States, which also practically controls the present means of transportation. Jamaica naturally objects to risk American retaliation upon her banana trade, which has grown to considerable proportions. After the decline of the sugar industry, as a result of the free trade policy of Great Britain, which gave a preference to bounty-fed German sugar, bananas became a big item in the list of Jamaica's exports. Jamaica sends 17,000,000 bunches to the United States every year. She could not afford to lose that trade.

West Indian Opinions.

But political as well as commercial union with Canada would make all the difference. Jamaica fully appreciates this. To quote from an editorial in *The Gleaner*, the most influential journal in the British West Indies:—

"The war has brought a spirit of oneness, especially that feeling of solidarity of imperial sentiment, a oneness of outlook. If the West Indies stood with Canada as one political and economic unit their position would be generally strengthened; they could be a part of a larger Canada—a Canada that has proved her worth in the battlefield as well as the peaceful plains of trade and commerce. Confederation is the political and economic watchword of the future."

The United States well understand that there is a great difference between penalizing the trade of one small island and meeting the commercial hostility of a powerful confederation.

Political union, too, will ensure the commercial development of the islands by encouraging investment and enterprise on the part of Canadian capital. Left to themselves, as they have been for generations, these tropical regions make very little progress, lacking both initiative and capital. Commercial union alone would not provide the necessary inducement for Canadian business men to embark capital in the development of the islands, subject as commercial arrangements are to revision by future Governments. Canadian business men

are active in the islands now as existing conditions permit. One of the largest banks in the Dominion, the Royal Bank, has numerous branches there. So has the Bank of Nova Scotia.

Commercial Advantages.

If trade without any tariff restrictions were established between the British West Indies, Newfoundland, and Canada, the interchange of commerce would be so large that the Dominion would readily furnish the subsidy necessary to make a fleet of modern boats profitable. Because of lack of markets, transportation difficulties, lack of capital and enterprise, the West Indies have been exporting only a tenth of the coffee, cocoanuts, dye-stuffs, early vegetables, fruit, even cattle, and all products that can be produced in a tropical country. Mr. E. L. Pease, vice-president of the Royal Bank of Canada, and an authority on this question, presenting strong arguments favoring this confederation, stated that the British West Indies could produce 3,000,000 tons of sugar annually, while now only about 200,000 tons are produced.

Political union would have other results. It would tend to stimulate Canada's interest in the islands, would quicken the process of economic development, and would be a valuable educative influence in the islands. Their people would be brought into touch with the larger questions of Imperial politics with which the Federal Parliament at Ottawa will certainly have to deal. But the political aspects of confederation may be reserved for discussion later. It is more important here to make it clear that the proposal serves Imperial ends and is of advantage to the Empire as a whole.

One of the elementary lessons of the war is that it is not desirable for any part of the Empire to be entirely dependent upon foreign markets, and that it is equally undesirable for any part of the Empire to depend for its food supplies upon foreign countries. If closer trade relations will make the Empire to a large extent independent of other countries and provide an adequate food supply for all parts of the Empire, and if that food supply can be produced and controlled within the Empire, it would be folly to neglect the necessary means. It would be more foolish still, in view of the unsettled state of international relations, to ignore the strategical and economic advantages inherent in the geographical distribution of the Empire's component parts.

Strategic Consideration.

From each of these points of view the proposed confederation of British possessions in North America has clear advantages. The British West Indies comprise a tropical territory larger than the Dominion of New Zealand and with double its population. The islands, since the opening of the Panama Canal, have acquired much greater importance from their situation at the point of intersection of the trade routes between Europe and Panama and between North and South America. They are an asset of immense strategical and economic value because they stand in the zone through which an enormous volume of the world's trade must pass and because they form an outpost for the defence of the Panama Canal, through which the wheat of Western Canada and the products of British Columbia will come to Europe.

At the present time, an undue proportion of the tropical products of the islands is taken by the United States. In 1915 Canada imported tropical products to the value of £6,000,000—only one-fifth of which came direct from the British West Indies. Most of these imports, apart from sugar, reached Canada through the United States. The direct exports of bananas to Canada from Jamaica are insignificant. Yet Canada imported in 1915 £460,000 worth of bananas from the United States. Conversely, Canada exports direct to Jamaica only one-tenth of the flour consumed there.

These figures show that, instead of direct interchange of trade between two parts of the Empire there is an indirect exchange of goods through a neutral country, with a consequent loss of profit and an increased cost for rehandling. What is still more important, control of a portion of the Empire's food supply is in the hands of another nation and a potential source of food supplies within the Empire has been neglected. Sugar provides the illustration. We have allowed the production of sugar in the British West Indies to decay. The encouragement and assistance it should receive will save it in the future and render us independent of supplies from Germany and Austria-Hungary. The United States preference for Cuban sugar enormously stimulated the trade of that island. Its production of sugar has increased from half a million tons to three million tons during the last 16 years. No one can doubt that the British West Indies, possessing all the essentials of cheap production, could build up a trade within the Empire equal to this if the industry were adequately protected and stimulated by Canadian capital and enterprise.

Benefits to Newfoundland.

Confederation with Canada and Newfoundland would guarantee to the islands a large and growing market for their products, while the free entry of their imports from those countries would greatly reduce their cost of living. Buying these products at present through the United States, where return cargoes of merchandise are furnished for the islands, both parties lose the benefit of the interchange of trade. America reaps it. Direct trade between the islands and Canada will lead, of course, to the starting of a line of fast steamers running from these islands up the St. Lawrence to the great centres of Canadian population, during open navigation, and to Halifax and St. John all the year round. When British Columbia entered the confederation, she stipulated for a railway linking her with the rest of the Dominion. No doubt a steamship line would be subsidized to carry the products of the islands to Newfoundland and Canada, filling up on the return journey with Canadian merchandise and Newfoundland fish. The islands would become independent of the American market, and the American broker as a profit-making intermediary would be eliminated. At present the transportation between the British West Indies and Canada is confined to the maritime provinces. But a line of steamers to the St. Lawrence, and the terminal facilities which will soon be completed at Halifax, upon which the Dominion Government will spend about £5,000,000, making through connection with the West over three Transcontinental lines of railways, will carry the products of these tropical islands also through the rich provinces of Quebec, Ontario, and the great West. In return the grain, flour, and manufactures of the West, as well as the products of the lower provinces, will be brought to the British West Indies.

Some have suggested that this question should be discussed after the war. The time is now. The Canadian people are keenly alive to, and are fulfilling their duties to, the Mother Country. They realize that by joining hands they can be to her a very tower of strength.



General View from South-east, Plant of Canadian Kodak Co., Limited

A STRIKING NEW INDUSTRIAL PLANT

Description of the Extensive Premises of the Canadian Kodak Company, Limited, on the Outskirts of Toronto

(Article and Illustrations by Courtesy of "Construction")

IN securing a plot of twenty-five acres of ground located on the Canadian Pacific and Grand Trunk Railways, between West Toronto and Weston, and which will henceforth be known as Kodak Heights, the management of the Canadian Kodak Company, Limited, chose a location that is ideal in many ways, situated as it is within easy access of Toronto, splendid transportation facilities, abundance of water for domestic and industrial purposes, and ample grounds both for the present enormous buildings, and future extensions. When the landscape architectural plans now under way are completed, the whole will include one of the most efficient and outstandingly attractive factory groups in Canada.

Landscape Architecture.

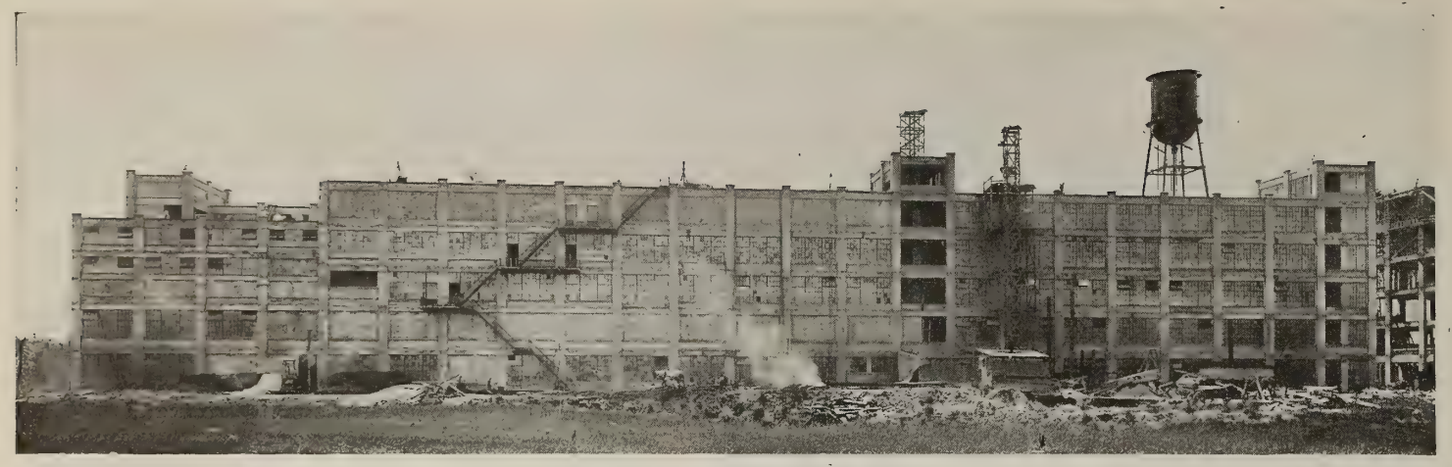
The problems to be considered in the beautification of the grounds of the modern industrial plant are threefold: First, treatment of the areas allotted by the requirements of the industry to permanent roadways, lawns, parking, etc.; second, the temporary development of the areas set aside for the more immediate future extension of the plant; and third, the beautification of the areas, such as banks and ravines, the provision for recreation housing, etc., on whatever ground seems unlikely to be used for factory buildings for some time to come.

In the treatment of the permanent areas, the object is not only to make the grounds themselves attractive, but to soften the long and severe lines of the buildings, and to lessen the appearance of height. The use of vines on the buildings, the judicious grouping of trees on the lawns, and the establishment of shrubbery along the foundations, do a great deal to accomplish this purpose. The permanent trees, such as the elm, maple, sycamore, etc., are the types for these permanent tree plantations, while the shrubs are selected so that their future growth will in no way affect the entrance of light and air to the buildings, and will incidentally add the color of their flower and foliage to the lawns.

The areas set aside for the first probable extension usually suggest merely a lawn treatment, but in order to overcome the marked difference resulting by leaving these areas in lawn only, and those of the adjoining permanent areas, which have been developed, the short-lived trees have been grouped on these lawns. Their growth is very rapid, and they can either be easily moved or cut down, depending upon their size at the time that the extension actually takes place. This type of tree includes the poplars, lindens, mountain ash, catalpa, etc. Shrub plantations can be established at walk intersections, and in beds along the boundaries of these temporary lawns. These also can be moved whenever it is necessary.

In the case of the Canadian Kodak Company, the treatment of the remaining areas required caring for several steep road slopes; the banks of ravines, which could only be partially filled at present; a high boundary fence surrounding the property; and a coal switch along the north side.

In the general scheme of the future development of the factory, this area of ten acres may not be used for buildings for several years to come. In accordance with the idea of the company, that their employees be given opportunity for exercise and recreation on the grounds, this area was planned to accommodate a baseball diamond, a football field, a bowling green, and tennis courts for both men and women. The boundary fence has been made less conspicuous by a plantation of the Lombardy poplar, which will also serve as a windbreak. The coal switch is screened by a shrub plantation. Shrubs and trees which have especially vigorous root systems, and thrive in light soil, such as the sumach, locust, willows, and acacia, are selected for the plantations on the



North Elevation, Building No. 3

roadway slopes, and the banks of the ravines. This will very effectively hold these banks in place and will add greatly to the appearance of the grounds as seen from the factory. It is a well established fact that the foliage of the trees and shrubs does a great deal to filter the dust and smoke from the air, and this fact has been kept in mind in planning the tree and shrub groups.

A plan for the finish of the grounds was carefully considered by the company at the beginning of construction in 1914. A complete planting plan was made as soon as the engineers had arranged the buildings to meet their requirements. Provision was made for saving all top soil suitable for finished grading, and the trees and shrubs required were ordered in small sizes to be lined out in a temporary nursery prepared for them. The nursery has made a saving of about fifty per cent. in cost of the shrubs, and there are in the present plantations many varieties which are much larger in size than any that can be secured from the average nursery list.

Buildings and Construction.

All the buildings, with the exception of the power house, which is a steel frame with brick walls, are constructed of reinforced concrete. The concrete work on these buildings is of a superior nature.

Before commencing construction, bearing tests were made of the soil, and a safe bearing pressure of one and one-half tons per square foot established. Concrete spread footings were used for the factory buildings, except the power house, the foundations of which were placed on concrete piles of the mushroom type. Beam girder construction was used throughout. All the interior partitions are of hollow tile, the fire walls being of brick.

Square twisted reinforcing steel was used in all walls and floor systems, and round bars with spiral hooking supplied the reinforcing for the columns. The typical base bearing is twenty by twenty-one feet for live floor loads of one hundred and fifty to two hundred pounds. All concrete was of graded crushed stone and cement, the floors and walls being a one to six mix, and the columns a one to four mix. Beam stresses were taken at six hundred and fifty pounds per square inch compression for the concrete, and sixteen hundred pounds per square inch tension on the steel. Every car of cement was tested at the mills by an independent testing company, and each car of reinforcing steel was inspected and tested by another company, which tests conformed for the most part to the standard of the American Society for Testing Materials. Test cylinders were taken of the concrete at the mixer at regular intervals. Test cylinders were required to develop a crushing strength of two thousand pounds per square inch in twenty-eight days. These tests were made in the testing department of the University of Toronto.

All the concrete was required to be machine mixed, and no spouting over twenty feet allowed. As some of the work was carried on in cold weather, special precautions were taken so that when the temperature fell below twenty-three degrees Fahrenheit, artificial heat was required. The casement sills were placed as a monolith with the ground floor slab. The slabs of the upper floors were wire brushed while the concrete was green. This was found later to be a waste of labor, as all slabs had to be picked for cement or mastic finish. Railroad tracks were run parallel with the various buildings. Bottom dump cars were used for the stone and bottom dump wagons for the sand. All this material was dropped into a hopper, picked up by a bricked hoist, and deposited in an over-head hopper capable of holding four carloads. The material was drawn into measuring hoppers by gravity, and then discharged into a mixer. The mixed concrete was hoisted in half-yard batches and discharged into six feet concrete buggies.

In addition to fire escapes, all buildings have stairways of the stair tower type; in other words, to reach a stairway one has to pass across an open balcony and into a stairway separated by heavy fire walls from the remainder of the building. It is found that this open balcony is not satisfactory for this climate, and they were finally closed in with a sash with clear glass, and especially large ventilators, which give a large opening by touching a lever, allow the smoke to escape.

Window cleaning bolts were placed in all cornices over which scaffolds could be suspended for window cleaning purposes.

The roofing consisted of four inches of cinders covered with cement finish and five-ply tar and slag roofing. Three-eighth inch pitch per foot was used, the main pitches being placed in a concrete slab. A copper counter flashing was placed in the forms before concrete was poured, being held in place by wooden strips which remained in the concrete. This was found to be a very satisfactory method.

One interesting feature in the concrete construction was the concrete bridges between buildings. Dowel rods were left in the buildings, and the bridges poured at a later date. Subsequent shrinkage in temperature changes caused the bridges to contract in opposite directions to the buildings. This resulted in the tearing of the concrete from the dowel rods and quarter-inch cracks opening up at bridges and building connections. Cracks already occurred in the bridges and the building near the bridges.

During the process of construction, quite a large fire occurred which, in addition to burning out form lumber under green concrete, allowing same to drop, burnt out the form work in one roof section which was two weeks old, and then in the process of being stripped. This concrete was quite badly damaged, but remained standing. Holes one foot square occurred in the slabs and a considerable amount of slab column steel was exposed. This was cleared and plastered with cement mortar, and subsequently subjected to an exhaustive test. One-eighth inch deflection was the maximum obtained with twice the specified live loading.

The entire fenestration of the group, comprising seventy-five thousand square feet, is of steel sash.

Over the cement floors, except in the power plant, was laid mastic flooring by experts, especially trained for this work. Owing to the different requirements of the various departments, and the varying degrees of temperature in the separate departments, it was found necessary to have different mixtures to withstand the different temperatures. This makes a permanent flooring, and requires no upkeep cost.

All wood used, being required for water cooler, tanks, fencing, etc., was treated with carbolite carbolineum.

Power, Lighting, Heating, Ventilation.

The power plant was laid out for a future of fifty per cent. increase in equipment. The building is two hundred and thirty-five by sixty feet in plan, and located in the valley at the rear of the main building with the boiler room floor thirty-five feet below the general first floor level factory buildings. This allows coal to be brought in railway cars over a steel trestle. The coal is then dumped from the cars into a six hundred ton concrete coal bunker located directly over a battery of four thousand three hundred horse power water tube boilers, with automatic smokeless furnaces and stokers. The ashes fall directly into a hopper below the furnace, and are drawn off into small hand cars in the ash tunnel below the furnaces. These hand cars are picked up by a one-ton sprig hoist and deposited in an overhead concrete bin.

Straight pipe fuel economizers are used, and the smoke is taken away by a two hundred foot radial brick chimney.

The boiler water is obtained through an outside reservoir which is fed by three artesian wells and rain water from the roofs. This water is passed through a water softener which has a capacity of six thousand U.S. gallons per hour. An exhaust fifteen hundred horse power feed water heater and receiver is used. This makes use of exhaust steam from the engines at three pounds pressure. The boiler feed water then passes through a water weigher into feed water pumps. One hundred and twenty-five pound boiler pressure is carried for the engines and pumps. This is reduced in the power house for factory purposes. Three pound exhaust steam is delivered to all the buildings for heating purposes. Steam traps were used in connection with the various low pressure steam lines. A system capable of caring for a twenty-four thousand horse power capacity is used in connection with all the high pressure steam piping in the power house. Two vacuum pumps capable of taking care of eighty thousand square feet of radiation on one-quarter pound per square foot are used for the steam returns.

The generator room is capable of developing five hundred kilowatts. D.C. current at two hundred and twenty volt is used. There are three generating units. One new unit of a three hundred K.W. capacity is also being installed.

The engine for this new generator is an Inglis horizontal cross compound heavy duty Corliss, direct connected to a three hundred K.W. direct current generator, and runs at one hundred and fifty revolutions per minute with steam at one hundred and fifty pounds and five pounds back pressure. The valve gear is operated by double wrist plates set for long range cut-off. The governor controls both high and low pressure cylinders. The cylinders are double ported, and valves are fitted with releasing gear, hooks of which latch outward. The fly-wheel is eleven feet in diameter, and weighs twenty-two thousand pounds. Eccentrics, cranks, etc., are enclosed in planished steel oil guards. Cast iron drip pans also form sole plates for the cylinder stools. The whole unit is mounted on a foundation built as a large concrete slab supported on concrete piers to allow easy access to piping, wiring, etc., which are below the engine room floor. Counterbalanced cranks are used to eliminate vibration.

Refrigeration.

The main unit of the three hundred and ninety ton refrigeration plant is the York two hundred ton machine, the largest vertical ammonia compressor in Canada.



Main Office Building, Plant Canadian Kodak Co., Limited



Building No. 3 in early stages of Construction

This machine has two vertical, single acting compressors, each twenty-one inches bore by thirty-two inches stroke. They are of the stand construction, equipped with safety heads. The discharge end of the compressor is water-jacketed, and the suction end insulated with nonpareil cork. Each compressor is equipped with indicator connections, and pressure relief valves in heads; the stuffing box nuts are operated by hand wheels geared from same, so that they can be adjusted by the engineer standing on the floor without going up to the first gallery of the machine. The compressors are direct connected to a horizontal cross compound Corliss engine. The high pressure cylinder is twenty inches by thirty-two inches and the low pressure, thirty-two inches by thirty-two inches. Each steam cylinder is equipped with force feed lubricator, hand oil pump, indicator connections, and two relief valves. The piston rods are of nickel steel. The pistons have metal wearing rings in addition to the packing rings, and the machine is packed throughout with metallic packing. The machine is fully equipped with every accessory, even to nickel-plated revolution counter, with ten-inch dial and central oiling system. The compressors have a capacity of two hundred tons ice melting in twenty-four hours when operating at one hundred and eighty-five pounds condensing pressure, twenty pound suction pressure, and sixty-five r.p.m.

The compression side consists of eight of the latest type double pipe, flooded ammonia condensers, made of two-inch and three-inch pipe eighteen feet long. These condensers are equipped with a purge drum for collecting the foreign gases, and have washout connections for the water tubes in addition to the regular water and ammonia valves and connections. The ammonia receiver is three feet six inches in diameter and sixteen feet long, and the high pressure oil separator is two feet in diameter and eight feet long. Both are wrought iron welded shells of standard construction. There is a check valve in the five-inch discharge line between the compressor and the condenser.

The evaporation side of the plant consists of water coolers and brine coolers, located in the room adjacent to the engine room, from which the water and brine is pumped to the different points in the factory where the refrigeration is.

Water cooling is accomplished by means of twelve stacks of water cooling coils, arranged in two batteries of six stacks each. Each stack is made of two-inch galvanized genuine ammonia pipe, twelve pipes high and twenty feet long, equipped with water distributing trough and galvanized iron splash strips between each pipe. Each battery of water coolers is equipped with oil drains and collecting tank and the suction gas passes through a trap or accumulator, which separates any liquid ammonia before it passes on and through the main thirty-inch by ten-foot scale trap in the suction ammonia line near the machine. By means of these various traps the gas is bound to reach the ammonia compressors in a slightly super-heated condition, which insures the machine operating at the very highest efficiency, at the same time enabling the cooling coils to be flooded with ammonia, so as to work at their maximum efficiency.

The brine cooling is accomplished by means of two York shell and tube type horizontal brine coolers, one fifty-one inches in diameter by sixteen feet long, the other thirty-nine inches by twelve feet long, with provision for future cooler, located on the floor above the water cooling room.

The brine storage tank has a capacity of thirty thousand gallons, and is located on the floor above the brine coolers. Two five hundred gallon per minute brine circulating pumps are located in the basement three floors below the brine tank, and one floor below the machine room. Eight-inch brine mains connect them to storage tank, brine cooler and cooling system.

The water cooler room, brine cooler, brine tank, brine mains, and all exposed cold ammonia mains are insulated with nonpareil cork. The cold water circulating pumps and brine pumps are of the triplex type, each pump direct



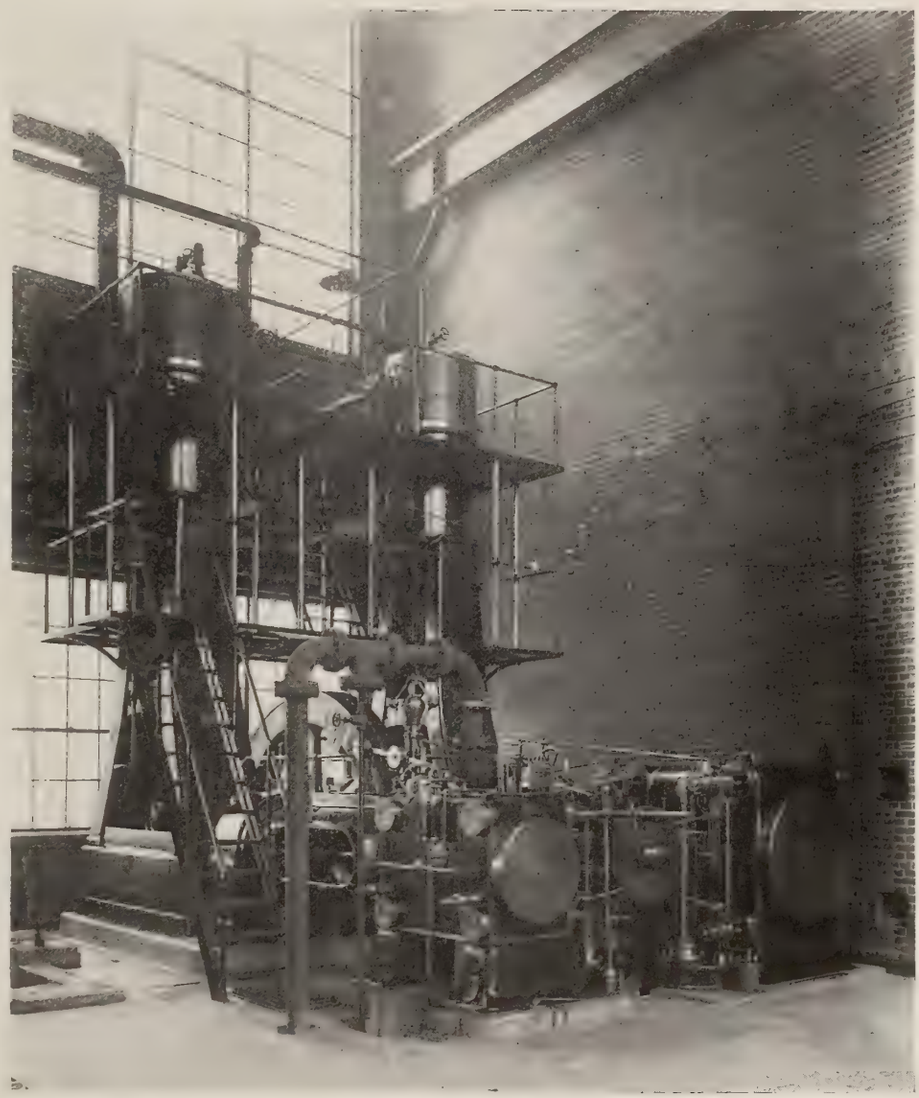
Bridge Connecting Buildings Nos. 3 and 5

connected to its own motor. The water for ammonia condensing purposes is cooled by means of an atmospheric type water-cooling tower on the roof of the main building. The water is circulated over this tower through the condensers by means of two centrifugal pumps direct connected to their own motors, each of a capacity of five hundred gallons per minute.

In addition to the new equipment described, there is a York fourteen by twenty-one inch vertical, single-acting compressor, direct connected to a fourteen by twenty-six by twenty-one inch cross compound Corliss engine, and a vertical De La Vergne machine equipped with York eighteen by twenty - eight inch ammonia compressors of one hundred and twenty-five tons capacity. This machine is direct connected to a horizontal simple Corliss engine.

The compression side for these latter two machines consists of eight stacks of standard counter current double pipe ammonia condensers, and five stacks of flooded double pipe ammonia condensers, with all necessary high pressure traps, receivers, etc., which are cross connected to the new unit and are arranged so that any one machine can be used on any or all of the condensers, either together or separately.

The refrigerating plant, as a whole, is one of the largest in Canada, and the new unit as described is the largest single - acting ammonia compressor installed in this country to date.



View of Compressor in Power House, Plant Canadian Kodak Co., Limited

Two fifteen - ton hand - power cranes are used, one in the generator and one in the ice machinery room. All the steam brine and chill water lines are carried through the power house to the various buildings through underground concrete tunnels. One hundred and sixty of these tunnels were required, ranging in size from nine feet by eight feet to four feet six inches by four feet six inches in sections.

Water Supply.

Water for drinking and factory purposes is obtained from three artesian wells ranging from one hundred and fifty to two hundred feet in depth. These wells flow into an eighty thousand gallon, well water, closed in, concrete reservoir. The overflow from this reservoir and the rain water from the roofs is collected in a seventy-five thousand gallon open concrete reservoir. This latter reservoir supplies the boilers. A twenty-five thousand gallon sprinkler tank is used for general factory purposes where purity is not required.

SPIRAL PIPE IN SMOKE STACK SERVICE.

In and around Chicago, there are several interesting specimens of stack construction, the behavior of which in service is being closely observed. These are unique for the reason that they are practically formed of a single piece of metal, a long sheet being wound upon itself, the edges being turned and locked upon a narrow strip. The latter, besides making a tight seal, acts also as a reinforcement so that, gage for gage, the spiral pipe is much stiffer and stronger than it is possible to secure by any system of riveting. In the making of a reinforced spiral pipe, two strips of steel of different widths are used. Both strips of steel are rolled to shape on the edges and are interlocked and rolled under very high pressure in a special machine which the manufacturing company has patented. The strips of steel are first cut the full width from long sheets and the ends are welded together. The steel is then placed on large spools. Both these strips are fed into the machine at one end, rolled into shape and interlocked in the machine, coming out at the other end in the shape of an endless pipe. At the point where the reinforcing band passes around the pipe there are four thicknesses of metal, which construction gives great rigidity and stability. The inside of the pipe is perfectly smooth, an important consideration, as there is no frictional resistance. One of the stacks referred to is 60 feet, and 30 inches in diameter. The spiral pipe is also designed for other purposes such as dredging, irrigation, pulp and paper making and brine circulation, and in these capacities, an important consideration is the fact that the interior surfaces are unbroken by rivets or anything else which might offer any obstruction to the movement of the material being conveyed.—*Scientific American.*

EMPLOYMENT, MEDICAL SUPERVISION, SAFETY

Industrial Betterment Work in a Large American Industrial Plant

By L. A. PHELPS

(Reprinted from the "Manufacturers' News")

THE principles, interests, functions and activities of employment, medical supervision and safety are so well known that they are no longer looked upon as innovations. Each has a definite part to play in the scheme of industrial life and they are usually considered separate and distinct interests. Nevertheless, experience is proving that these principles, interests, functions, and activities are so closely and absolutely correlated as to indicate that eventually, perhaps in the very near future, they will be universally considered inseparable. Each of the three has to do primarily with the greatest of all creations—*men.*

First, there is the need of a man—the organization has a place unfilled, it is incomplete. It is of prime importance to that organization that the new member be fit—that he be capable intellectually, physically, and morally, for the responsibility. He must be of a certain and sure calibre of mind, of a certain intellectuality, and of a certain skill and experience—dependent wholly upon the place in the organization which he is to fill.

This must be determined by those in charge of his selection—the employment department and the executive in whose department he is to work. His past experience, his present ability, and his character must be carefully considered. They are very important considerations.

Is the Man Physically Fit?

No less important, however, are other considerations. Is he physically fit? Is he capable of the physical effort required with *Safety* to himself and his fellows? If so, will he have a safe place in which to work? Will he continue to be a safe man? If he is not physically safe, what are you going to do with him? Are you going to throw him out bodily because he is not physically fit for the job for which he is being considered, or are you going to find a place for him in your organization if possible to do so—a place compatible with his physical and mental condition?

Suppose that he fails to make good in his first assignment. Is your foreman going to fire him, or are you going to try to save your investment and realize on it?

After a man enters your organization are you going to forget his physical welfare or are you going to follow him up and see if he continues to be safe?

The man in charge of employment must be keen, broad gauge, a good judge of men—with a thorough knowledge of the positions which he is to keep supplied with men. He must know every job in the plant in order to intelligently supply the men.

Having selected his man so far as experience, ability and character are concerned he must next know whether or not he is *physically* fit. This can be determined only by a skilled physician who is willing to dig deeply into the history and the present physical condition of the applicant. He must examine thoroughly in order to be certain that the applicant is physically suitable and safe for the job, and that the job and the applicant's physical condition are compatible.

Knowing the Job and the Man.

The working knowledge possessed by the superintendent of employment and the physician must be so complete concerning the requirements as to obviate the possibility of error in the ultimate decision. In the great majority of instances this is a comparatively simple matter, but there comes a day when a very promising young man shows up with a physical condition that is not promising. Perhaps it indicates that sooner or later he will develop a hernia. He has been unaware of his condition but *that* would not have saved him. The work for which he had been selected is heavy, there is a certainty that he will rupture himself if permitted to go to that job.

In the Avery Company this man is not rejected if there is any possibility of placing him. The superintendent of employment knows every job in the plant and in the great majority of cases that promising young man is placed where he and his work are entirely compatible and he is safe.

I call to mind one young man who was very eager to enter the tractor erecting department. He had had considerable farming experience and desired to learn tractor construction in order to specialize in power farming.

He applied for work and was accepted by the superintendent of employment. His physical examination disclosed a very small hernia which was entirely unknown to the man himself. Assembling tractors was out of the question and the ambition of the young man was apparently thwarted. He was unable financially to undergo an operation and it seemed that there was nothing that could be done. A conference between the doctor and the superintendent of employment followed.

"Why," said the superintendent, "that's easy. They want a man to set magnetos and wire tractors. That won't hurt him." The physician passed the young man for that job and to-day he is doing light work of that character, gaining the desired experience and information, studying the tractor and saving money for his operation. A one-sided system would have rejected him and discouraged him.

Constant Medical Supervision.

After your man has been selected and placed he must by no means be forgotten. His career must be carefully watched and his efficiency maintained. Constant medical supervision and periodic re-examinations are absolutely essential and the physician in charge of this feature of the work must be skilled, tactful, and, above all other things, intensely human—capable of gaining and *holding* the confidence of the men in his care.

One of your foremen notices that the output or the "pep" of one of his men is falling off. Perhaps your safety inspector notices that a man is careless when he used to be a very careful man. Perhaps one of your men is the victim of a series of minor injuries. At the Avery Company these matters are brought to the attention of the superintendent of employment. He investigates and arranges for an interview with the man.

The man has a good heart to heart talk with the doctor, who learns that the workman is not up to par. He is unable to account for his loss of "pep" and reduced output or his carelessness or his series of accidents. An examination by a careful, competent, and interested diagnostician usually discloses the reason. He is given good, wholesome advice as to his manner of living, his habits, and his food. If medical treatment is necessary he is given the benefit of expert knowl-

edge at no cost to himself. He begins to show improvement and is soon feeling fit. He is up to par, he recovers his "pep," his producing ability increases, and his accidents decrease. He has his old fire and carefulness. He is a profitable employee and not a drag.

An Ambitious Foreman.

One of the foremen was very ambitious, he wanted to advance. To gain his purpose he studied half the night and tried to do his daily work with about half the required rest. His eyes failed him and he nearly wrecked his health. Half an hour with the doctor set him right and by reducing his study hours and increasing his hours of sleep he found that he advanced much more rapidly and is to-day a successful man. Medicial supervision saved him.

Another man came in for his regular re-examination. It was found that his blood pressure was extremely high. The doctor said: "Well, old man, your work is of such a character that you are in no immediate danger from it and your condition is such that it can be entirely relieved by proper treatment. You are fortunate. Your work won't have to be changed.

The superintendent of employment was advised of the man's condition. "But, doctor," he said, "this man is, in conjunction with his regular work, a member of the plant fire department." The result was that the man was immediately removed from the fire department, which was daily jeopardizing his very life. He was given a course of treatment and is to-day in excellent condition. The successful termination of this case was due entirely to the fact that the correlation between employment, medical supervision and safety is so thoroughly appreciated and so efficiently applied that not a single feature of the case was left unattended to. The unity of purpose and action left no detail undone.

Knowing the Workmen.

The employment department, through its close association with the physician and his activities, gains an intimate and invaluable knowledge of things concerning the workmen that could never be gained in any other manner, and vice versa, the physician gets a very detailed and thorough knowledge of the workings of the plant and the individual activities of the workmen.

One young man came in for treatment with a dermatitis. The doctor inquired carefully into his personal habits and work. He finally decided that the cutting compound used on the lathe operated by the patient might possibly be responsible for the stubborn manner in which the affection refused to heal.

A consultation followed and the superintendent of employment requested the workman's foreman to change his work so as to relieve him of the questionable compound. The man's work was changed—a different class of work was run on his machine—work that did not require the use of compound, and in a few days the trouble had entirely disappeared.

Another young man came to the dispensary with a very nasty-looking skin eruption on his arms. He was employed as a dipper—dipping small wood parts in a dip tank filled with a naphtha mixed priming plant.

The doctor diagnosed the trouble as a naphtha dermatitis and ordered the man to discontinue dipping. The superintendent of employment, who stood near, stepped to the 'phone and in less than two minutes other work had been arranged for the patient, and in an entirely different department.

His skin could not stand the naphtha, but he was a very desirable employee and his new work solved the problem; he had no more dermatitis.

Company Would Lose Useful Men.

Under the old system the man would probably have laid off until he recovered. When he returned to work he would have suffered the same experience and would probably have finally quit in disgust and discouragement. The company would have lost a desirable man.

The year 1916 has been, in many respects, a very peculiar one. With the entire country in a state of almost unparalleled activity and prosperity and the demand for workmen unusually great, industry has been called upon to face a condition of much unrest in the ranks of labor. Employment has been so plentiful, a new job so easy to secure, that workmen have had no hesitancy in quitting hastily and on short notice, knowing that they would have no trouble in obtaining new employment. For this reason we understand that the labor turnover all over the country has been extremely high.

Strikes, walk-outs, demands for shorter hours and increased wages have been the order of the day, but with these experiences, everyday occurrences all about us, the Avery Company has almost entirely escaped. There must be a very potent reason for this and it is their sincere belief that their system of employment, medical supervision and Safety has been no small factor in their experience.

The very best of all the men hired by the Avery Company have stayed with them.

One young man, attracted by a promise of larger opportunities and increased wages, found that his new employer paid little attention to Safety and the personal welfare of his employees. A few days at this new employment was an eye-opener for this young man. He realized more than he had ever done before what the personal interest manifested by the Avery Company meant to the workman. He returned to his old job and remarked to the doctor that he and his wife had come to the conclusion that the safe shop and personal care were things that were well worth considering. He remarked: "My wife said to me that the assurance of my coming home at night safe and all together were worth more to her and our children than higher wages coupled with uncertainty."

GROUP INSURANCE.

Another Manufacturing Company Recognizes Service of Employees.

In recognition of efficiency as well as faithful service to the company, the Aberfoyle Manufacturing Company, of Chester, Pa., is rewarding its employees for their loyal co-operation by protecting each member of their large corps of workers under a group life insurance policy. The company manufactures fine textile fabrics and has about 1,500 employees on its pay-roll who will be benefited by the announcement. Hereafter any person in the employ of the company for a period longer than four weeks will be insured as long as they may be in the employ of the company. The insurance policies to each employee are issued by the Ætna Insurance Company, without any expense to the employee whatsoever.

The insurance will be adjusted upon completion of each succeeding year of continuous service for periods of five years from February 15, 1917. For the second, third, fourth, fifth and sixth years additional insurance equal to approximate increase in earnings for preceding year.

As an example under the above arrangement an employee who has earned approximately $500 during the year ending February 15, 1917, will be insured for $500. If during the year ending February 15, 1918, this employee earns approximately $600 his insurance will be increased from $500 to $600; $100 of the increase representing additional insurance for increase in wages, and $60 additional insurance for continuous service. This would make a total of $660 insurance at the end of the first year.

Correspondence

The Editor is always pleased to receive letters for publication in "Industrial Canada" bearing on subjects of interest to Canadian manufacturers, the desire being to provide a medium for the expression of opinion on matters affecting the welfare of the industrial life of the country.

THE MASTER CATALOGUE.

The Editor, INDUSTRIAL CANADA:

We have read with considerable interest your leading article on the subject of "the Master Catalogue."

The principal advantage that we perceive in the proposal of Mr. W. L. Chandler is that the pages of the catalogue are of the standard letter size sheet, 8½ in. x 11 in., so that all advertising information can be readily filed in the regular commercial filing cabinet.

We have been producing advertising matter on this principle in Canada for the last five years, and we know that our bulletins and catalogues have been kept, whereas they would inevitably have found their way to the waste paper basket if they had been larger or smaller than the size indicated.

In our experience there are very few concerns who make a practice of filing all catalogues as received. It requires considerable effort and persistence to train an ordinary office employee to keep up a special catalogue file, whereas, if the ordinary corresponodence file can be used, the work requires no special effort and the printed information can always be found promptly when needed.

When these loose leaves are filed under the name of the company publishing them, there is no difficulty in finding them. The cross indexing of the catalogue can readily be done by means of a standard 5 in x 3 in. card index to suit the requirements of each department, and when the cards are filed according to subject, with reference only to the name of the various manufacturers, there is no difficulty in locating the required information.

We enclose a sample of one of our standard bulletins for your information.

Yours truly,

THE HERBERT MORRIS CRANE & HOIST COMPANY, LIMITED.

M. R. MELDRUM,
General Manager.

Toronto, April 25, 1917.

THE RIGHT TO FIX RESALE PRICES.

The Editor, INDUSTRIAL CANADA:

Mr. John C. Kirkwood has supplied a very valuable contribution in his article entitled, "The Manufacturer's Right to Fix Resale Prices," appearing in your March issue, and I submit the following for your consideration as a testimonial to and in further support of his contentions:

The purpose of a maintained resale for the manufacturer has, as Mr. Kirkwood shows, the dual effect of assuring to the various merchandising concerns a return for the efforts they put forth by which this merchandise is introduced to the consuming public, and the assuring to this consuming public a price which is not in excess of that which the manufacturer feels the public should pay for it. The giving away of the remuneration which the merchandising concern receives in the way of better cost price as compared with consumers, i.e., ultimate users; cost price, is at the root of cut prices. It is a method which stripped of the respectability which it assumes under the title of "extraordinary advertising," or, "sacrifice for the public good," or, "big volume at small profits, our slogan," etc., amounts to nothing more or less than buying patronage.

The manufacturer buys distribution outlets through merchandising concerns by giving them "protection," said protection being the difference between wholesale and consumers' cost respectively. The "protection" in other words is the merchandising concern's gross profit or commission, and it can vary more or less according to the size of a single shipment and the frequency with which they are made. The size of an order for one shipment governs the cost to the manufacturer of disposing of his wares. To some buyers orders are moved in large quantities and at frequent intervals of time between shipments; to others, in smaller quantities and at infrequent intervals between shipments with consequent increased expenses of packing, hauling, invoicing and collection of accounts.

Merchandising concerns in each of these two classifications of a manufacturer's customers are therefore not on the same basis of remuneration if they sell a consumer at a fixed price, neither should they be. The distribution at a lower cost secured to the manufacturer by the concern buying large quantities is of more value than the small distribution secured from the small concern. What then is to protect the small concern and keep him in the distributing business if the big distributor sells at a reduction proportionate to his lower cost?

Throw open the privilege of making a cut price in proportion to the cost based upon the volume of the purchases and the large buyer selling at reduced prices instantly has an advantage over the smaller buyer with his smaller gross profit of remuneration from distribution. If to meet competition, he is forced to cut prices and then finds his cost of doing business exceeds his gross profit, he is on the road to a commercial failure and through no fault of his own. Let this condition be fostered long enough and the law against a fixed resale price to consumers will have actually introduced monopoly and by its enactment will have ended in exactly what it had aimed to destroy—a favorable place of commercial advantage for a few—a few further reduced by the process of forming syndicates—at the expense of a great number of persons or concerns crowded out of legitimate engagement in trade. As Mr. Kirkwood so clearly points out, the buying public will be no better off since, with competition eliminated, the public pays what the monopoly demands and there is no redress for it either.

I do not believe that legislation, which will tend to benefit a few at the expense of many, will find favor in any country, and I do not believe the author of the Knowles Bill intended his to work out that way, but there are plenty of cases on record in the United States where, before the enforcement of recommendations of the Interstate Commerce Commission, "predatory wealth," as Roosevelt named it, held the whip hand, mainly because the advantages of quantity buying were turned against those whose purchases for the same markets were relatively small, and to prevent this by fixing the price to the consumers is the real reason why the Stephens Bill was submitted to Congress and has the approval of a majority in the United States Chamber of Commerce. It appeals to many as a solution of a problem in which the force of aggregated capital threatens individually owned small enterprises which are much in need of relief.

Yours truly,

E. H. HYDE,
Supply Sales Manager,
Northern Electric Co., Ltd.

Montreal, April 24, 1917.

TRAINING IN FIRST AID.

The Editor, INDUSTRIAL CANADA:

During the past few years the Canadian Branch of the St. John Ambulance Association has been concerned with the problem of spreading a knowledge of First Aid in cases of accident or sudden illness, among the public generally, but more particularly among employees in factories and other commercial establishments. This instruction is for the purpose of minimizing, by the application of skilled treatment, the effects of accident or sudden illness. Through classes in First Aid a knowledge is imparted which enables the disability, when it occurs, to be scientifically attended to with the view of alleviating human suffering and preventing the occurrence of complications which may result from neglect or ignorance as to the proper treatment to adopt.

The Association is also anxious that every manufacturing establishment in Canada should be adequately equipped with First Aid material, in order that employees possessing a First Aid knowledge may be afforded every facility for putting that knowledge to intelligent use in case of necessity.

We have every confidence that the humanitarian side of the matter will appeal to employers, and that they will also recognize the moral obligation to take all reasonable steps to minimize the results of such accidents as may occur to their employees.

Apart from this, there is another aspect which, from the commercial point of view, the employer cannot afford to overlook, namely: That the result of training the worker to administer First Aid promptly and efficiently must be reflected in the cost incurred under the Workmen's Compensation Acts in those provinces in which such Acts are in force, and will also tend in a large measure to reduce the aggregate period of disability of the employees.

Should any manufacturer desire to take advantage of the facilities of the Association in this regard, application to the Provincial Headquarters of the Association, or to this office, will receive prompt action. The names and addresses of the Provincial Secretaries are as follows:

British Columbia—William Burns, Vancouver.
Alberta—R. E. Ottewell, University of Alberta, Edmonton.
Saskatchewan—A. E. Counsell, McCallum-Hill Building, Regina.
Manitoba—J. A. Machray, Box 1893, Winnipeg.
Ontario—C. J. Copp, M.D., 554½ Yonge Street, Toronto.
Quebec—S. A. Gidlow, 1207 Des Erables St., Montreal.
New Brunswick—Miss Lillian Hazen, 66 Hazen Street, St. John.
Nova Scotia—W. H. Studd, Prov. Auditor's Office, Halifax.
Prince Edward Island—Major Ira J. Yeo, Charlottetown.

Yours truly,

R. J. BIRDWHISTLE,
General Secretary,
St. John Ambulance Association.

Ottawa.

DRILLING WELLS IN THE WEST.

The Editor, INDUSTRIAL CANADA:

We have pleasure in calling your attention to a Conference to be held in Lethbridge some time in June on the subject of well water supply. You may be able to make some reference to this in your publication.

There are great openings in connection with the supply of drilling outfits, well casings, etc., etc., in this part of Alberta that have perhaps not been properly appreciated; and there are too few people engaged in the actual business of drilling wells for water. This will be a steady business from now on.

The Canadian Pacific Railway are now advertising for contractors for drilling a 700 to 800 foot well at Foremost, on the Lethbridge-Weyburn line, some 70 miles southeast of Lethbridge.

Yours truly,

G. R. MARNOCH,
President,
Lethbridge Board of Trade.

Lethbridge, April 17, 1917.

[Mr. Marnoch's letter contains a memorandum sent out by the Lethbridge Board of Trade and dealing with the subject of more and better water for the farmer. The matters to be discussed at the conference are well waters, water conservation, stock watering reservations, purification of surface and well waters, water systems for country homes and publicity. The importance of all these subjects is obvious. Lack of good wells has hitherto prevented the keeping of more live stock on Western farms and is thus retarding an important industry.—EDITOR.]

THE CAREFUL MAN.

It has been well said that the best safety device is a careful man. A careful man will keep out of danger and not get hurt, even if there were no safety devices in the factory at all. The company has done about all it can in the way of protecting the men from injury. Thousands of dollars have been spent in covering all pulleys and other moving machine parts, gates have been put up at dangerous places and danger signs hung wherever necessary. It seems to me that now it is up to the men themselves.

That good old slogan "Safety First" should be heeded by every man who works in a factory, whether a large place or a small one. He should so educate himself to be careful, that while at work he will unconsciously think of "Safety First" before all other things. His health and his life depend on it.

So many men I have noticed are so anxious to make a good day's wages that they take chances that are dangerous. Such men are always getting hurt. Others come in in the morning with dull heads and heavy eyes from too much good times the night before and are in no fit condition to operate machinery. They are also very liable to get hurt.

It pays to be careful outside the factory as well as inside. Look both ways when getting off a street car, before crossing to the sidewalk. Every day the papers tell of some new accident to people who are not careful. Keep off railroad tracks. Lots of men take short cuts on railroad tracks because it is easier. But it's dangerous and the careful man stays away.

The careful man also takes care of his health. He gets as much sleep as he can so that when he comes to work in the morning his mind is clear and his eyes are bright and he is in the best possible condition for a day's work. He eats good plain food and leaves whiskey alone so that his body is strong and fit.

A careful man will not start his press until he is sure everything is all right and safe. He will see that all bolts and nuts are tight, that the press is well lubricated and that the dies are set properly. He will then go ahead and can work faster and do better work because both his machine and himself are in the best of condition.

If all workingmen would try to be more careful it would cut the percentage of accidents and troubles of all kinds that we have now.—*Frank Komorowski—Shop Safety Bulletin—A. O. Smith Co.*

INSVRANCE

MARCH FIRE LOSSES.

Were in Excess of Those of February by Considerable Amount.

According to estimates compiled by the *Monetary Times*, the fire loss throughout Canada during the month of March amounted to $2,050,650 as compared with $2,009,953 during February and $1,406,501 during March, 1916. This brings the total losses for the first three months of this year up to $5,979,263.

ONTARIO INSURANCE COMMISSION.

The Subject of Fire Prevention to be Included in the Scope of the Inquiry.

The scope of the Ontario Insurance Investigation has been extended by the inclusion of fire prevention among the subjects to be dealt with by the Commission. This is a very broad subject and will lengthen considerably the period occupied by the investigation. It is to be hoped that some definite scheme of action will be arrived at which will tend to reduce our present enormous fire losses. After all, it is only reasonable to expect that actual fire losses must be reduced before the cost of fire insurance can be brought down to any great extent. The sittings of the Commission in Toronto will probably not be resumed until July next.

NEW ENGLAND MUTUALS DURING 1916.

Average Percentage of Dividend Returned to Policyholders Was 71 Per Cent.

The following figures, abstracted from the report of the New York Insurance Department, are interesting as showing the experience of the principal "New England Mutual" companies during the year 1916. The figures refer to twenty-nine companies, which are members of either the Associated Factory Mutual Fire Insurance Companies or the Junior Conference of Factory Mutual Insurance Companies.

The total premium income (premium deposits) of the twenty-nine companies amounted to $16,317,635. Of this amount $2,550,356 was required to pay losses and underwriting expenses. The average percentage of dividend returned to policy holders during the year amounted to 71 per cent., the lowest dividend being 56.9 per cent., and the highest 83.3 per cent. It is feared that the numerous heavy losses on sprinklered risks which have already occurred this year, will prevent the record of 1917 from equalling the one shown above.

GERMAN INSURANCE COMPANIES.

How the United States is Dealing with the Operations of These Companies.

By a special proclamation, President Wilson has recognized the peculiar position occupied by the United States branches of German insurance companies, and has ordained that such establishments now doing business in that country may continue their operations in accordance with the laws of the various states "in the same manner and to the same extent as though a state of war did not now exist." However, the President places restrictions upon these branches, requiring that their funds shall be subject to such rules and regulations as to their use and disposition as the state officials may prescribe, and particularly prohibiting the transmission of the funds of the German companies outside of the United States, and forbidding the use of their funds as the basis for the establishment, directly or indirectly, of any credit within or outside of the United States, for the benefit of the enemy or any of his allies. So far as British subjects are concerned, it has, of course, been illegal since the commencement of the war, to accept policies of any German company.

A LARGE "USE AND OCCUPANCY" CLAIM.

Interesting Features Connected with Adjustment under this Form of Policy.

The Saxon Motor Car Company of Detroit, whose plant was recently destroyed by fire, have agreed to a settlement of $433,333 under their "use and occupancy" insurance. They carried this class of insurance to the extent of $1,000,000, the policies covering 300 working days for $3,333.33 for every day, the plant was entirely unable to operate. The settlement is for 130 days of non-operation, calculated on a basis of 110 full days and 40 half days. This is the largest loss ever paid under the "use and occupancy" form, and the settlement presented some unusual complications. The assured had a new plant in another location in course of erection and had no intention of rebuilding the burned plant. This made the adjustment a theoretical rather than a practical proposition. The adjuster's task was to arrive, as nearly as possible, at the actual loss, apart from property damage, sustained by the assured on account of the fire. The Saxon Company has leased a vacant building, made numerous changes and begun the assembly of cars, but it was claimed that the emergency charges cost $100,000 and that the working conditions are so unfavorable that cars are being produced at a loss instead of at a profit. The fact that a new plant was in course of erection has probably saved the insurance companies a good deal of money, since building conditions in Detroit are so abnormal that it would have taken a very considerable period to reinstate the plant destroyed. Both the companies and the assured appear to be well satisfied with the settlement arrived at.

A SPRINKLERED PLANT WHICH BURNED.

Unfortunate Position of a Company Which was Burnt Out When Water was Off.

The Union Switch and Signal Company equipped their plant at Swissvale, Pa., with a first-class sprinkler equipment, so they knew they could not be burned out. One of the sprinkler pipes became frozen and the water had to be temporarily shut off to effect repairs. The plant was completely destroyed.

The report of the fire shows that a spell of exceptionally cold weather had made such heavy demands on the heating boilers that two of them had to be shut down to repair burned arches and grate bars. The remaining boilers were insufficient to maintain an adequate temperature, with the result that one of the sprinkler pipes was frozen. To effect repairs, the water was shut off a portion of the equipment at 1.00 p m., and after the work was completed the water was not turned on again as it was feared that the equipment might again

freeze. The fire was discovered at 4.18 p.m. before it had attained great proportions, and an alarm was promptly given. The first men on the scene tried to use the small hose attached to the sprinkler system, but of course got no water, as the water was shut off. The time thus wasted allowed the fire to gain such headway that it was speedily beyond control. The fire brigade arrived ten minutes after discovery of the fire and their inability to get water from the hydrants seems to prove that the main valve controlling the public water supply to the entire system was shut—probably without authorization of the management and for no reason whatever. The secondary supply to the system consisted of two 1,000 gallon pumps. There was a delay of forty minutes in raising steam pressure and getting the steam pump started owing to great neglect in allowing the steam pressure to run down when the plant was not in operation. There was a delay of one hour and forty-five minutes in starting the electric pump, as the ordinary source of electric current was not available, this again being attributable to the drop in steam pressure.

Altogether, every fact in connection with the fire serves to show that the assured considered that they had spoken the last word in fire prevention as soon as they had installed the equipment. It cannot be too frequently emphasized that a sprinklered plant with the equipment shut off is more likely to burn than an unsprinklered plant, since ordinary precautions are relaxed. Automatic sprinklers constitute the most efficient fire preventive appliance in existence, but they must be kept in order. On every sprinklered plant there should be at least one man who thoroughly understands the system and who should be made responsible for its efficiency being maintained.

TRANSPORTATION

By J. E. WALSH

RAILWAY COMPANY LIABLE.

Must Pay Damages on Shipment Which Went Bad During Transit.

Mr. Justice Maclennan gave judgment in the Superior Court in Montreal on April 24, condemning the Grand Trunk Railway Company to pay $6,029.60 to the Walter M. Lowney Company in compensation for the loss the plaintiff company suffered through the railway company having delivered in a damaged condition a consignment of chocolate confectionery shipped from Montreal to Vancouver, B.C., in October, 1914.

It was specially stipulated by the bill of lading that the consignment was to be shipped in a refrigerator car, which was "not to be iced in transit." When, about October 19, 1914, the shipment was delivered at plaintiff's warehouse in Vancouver, the chocolate was found to be so badly damaged by dampness that it could not be accepted.

"The company defendant," said Justice Maclennan, in rendering judgment, "was responsible for the safe carriage and delivery of these goods, not only over its own line, but over the connecting railways between Montreal and Vancouver, unless defendant proved that the loss or damage arose from a defect or inherent vice in the goods themselves. Defendant has not established any such defect or inherent vice. Defendant has not proved that the goods were carried in accordance with the provisions of the bill of lading and that the car was not iced in transit. On the other hand, there was every indication that the car had been iced in transit. As, therefore, defendant has not established any ground upon which the railway company can be released from liability for the loss and damage sustained by plaintiff in connection with the goods in question, plaintiff's action is maintained for the full amount of the claim, with interest from the date of service of action and costs."

PROPOSED CANADIAN FREIGHT CLASSIFICATION NO. 17.

Railway Board Issues Memorandum Directing Various Interests to Settle Differences by Conference.

In the April issue we announced the determination of the Railway Commission to hold sittings in Hamilton, Toronto, Ottawa and Montreal, beginning the 12th ult. and ending the 18th ult., and outlined the situation in regard to this matter up to that time.

The hearings were held as scheduled, and quite a few of the manufacturers and others interested made statements objecting to the matter being gone on with at the present time. At the hearing in Montreal on the 18th ult. the Board was asked by both the shipping and the railway interests to outline further procedure. Accordingly, on April 21st, the Board issued the following memorandum:—

At the sittings of the Board on the 18th instant, at Montreal, we were asked by those representing both the railways and the shipping interests to make some announcement as to what procedure the Board proposed following in connection with further consideration of this matter.

The proposed classification has now been discussed before us at sittings of the Board at Hamilton, Toronto, Ottawa, and Montreal. We have heard some interim explanations from the railway interests and a number of objections to both the rules and the classification from a large number of shippers. Probably the criticism which shipping interests west of Lake Superior desire to offer to the proposed classification may be somewhat dissimilar to the criticism we have already heard. It seems to me, therefore, that before the Board gives any further consideration to the matter that this application should be set down for hearing at the chief centres of population in the West, so that those interested may have an opportunity of expressing their views to the Board. Such sittings will be held within the next few weeks.

After these hearings in the West and the general position with regard to the proposed classification of western shippers and traders will be before us. I think the railway interests should be directed to hold informal conferences with those interested in different lines of trade with the idea of having the parties interested agreed as much as possible on the details of the proposed classification. After these conferences there will doubtless have to be a further discussion before the Board, and at that time we will be in a position to decide on further procedure.

(Sgd.) D'Arcy Scott.

"I Agree"
S. J. McL.
H. L.D.

Ottawa, April, 21, 1917.

It will be seen that it is the opinion that the railway companies and shippers can by conference dispose of a large portion of the changes proposed.

NEW CAR SERVICE RULES.

Chief Commissioner of Railway Board has Refused to Allow Continuance of Advanced Charges.

All members of the Association have been furnished with a copy of the new Car Service Rules, which have been submitted to the Board of Railway Commissioners for approval.

In this connection it is interesting to note that while the Canadian Car Service Bureau requested the continuance of the advanced charges (which were temporarily allowed by the Board), the Chief Commissioner refused same and issued the following judgment:—

The Canadian Car Service Bureau have submitted to the Board a new code of Demurrage Rules for approval, and also ask that the provisions of General Order No. 174, effective January 1 to April 30, 1917, be continued in force pending the approval of the new rules.

General Order 174 was made by the Board, having regard to the extraordinary conditions and congestion of traffic then existing. Something had to be done to compel the release of cars and cleaning up of terminals. Although, in the first instance, any such action was strenuously objected to by shippers, they, in their turn, after the matter was spoken to on two different days and after prolonged discussion, realized that something radical had to be done. As a final result the Order was practically a consent Order. It is true that some of the shippers desired that no increase in the demurrage should be made; but, speaking generally, the large mass of the shippers interested fully recognized that something ought to be done, in fact would have to be done, and consented to the action that was taken.

It was clearly understood by everybody, not only by the shippers and the Board, but by the railways themselves, that the Order was a temporary Order. Under the circumstances, it cannot be renewed or further changes in the Order made, without the submission of necessary evidence and a necessary hearing or hearings.

(Sgd.) H. L. D.

Ottawa, April 24, 1917.

The conditions which existed this winter clearly showed that advanced demurrage charges were of little avail in increasing available cars or in facilitating the movement of traffic.

ACTION DEFERRED.

Lake and Rail Rate Advance to Points West of Fort William Has Been Postponed Until After Hearings in Western Canada.

The Railway Commission, in answer to the protest against the increase in Lake and Rail rates from Eastern Canada to Fort William and other lake ports, has ruled they could not interfere with the tariffs naming these rates, as the railway companies might, in their discretion, meet water competition if they saw fit to do so, and also determine the extent to which they were to meet it.

It is also stated that the only rates which the Board had under consideration in issuing this judgment were the local lake and rail rates to Fort William and other lake ports, scheduled to take effect April 2, 1917.

However, shortly afterwards the carriers proposed to advance the lake and rail rates from points in Eastern Canada to points west of Fort William, by Tariffs Nos. 2 and 3, issued by G. C. Ransom, as agent, to take effect April 23, 1917.

On complaint of the Association and others interested the Board, by General Order No. 187, suspended the proposed increase in both class and commodity rates applying between points in Eastern Canada and points west of Fort William, and the so-called "Furtherance" or "Proportional" rates from Eastern Canada to Port Arthur, Fort William or Westfort. The carriers were also directed to restore the rates between the above-mentioned territory which were in effect at the close of navigation in 1916.

As it is the intention of the Board to hold sittings in regard to this matter at the principal points in Western Canada, it is assumed that these hearings will take place at the same time as the Classification hearings beginning the latter part of May.

NEW "SUMMER" CLASS RATES.

Will be Continued this Year though on a Slightly Higher Scale.

The so-called "Summer" Class Rates, which have been in effect during the season of navigation between Montreal, Toronto and Hamilton and intermediate points for a great many years, were to have been discontinued by the railways this summer. Following complaint, the Commission directed that they be continued on the basis of 2c. first-class and 1c. fifth-class over the summer basis in effect last year.

Had the carriers' proposal been allowed the rates would have been materially increased over those in effect during the season of navigation last year. For example—the rate from Toronto to Montreal would have been 46c. first-class and 23c. fifth-class, compared with 40c. first-class and 20c fifth-class.

EXPORT RATES TO MONTREAL AND QUEBEC.

How Summer Class Rates will Affect these Rates and Cause Reductions on First Three Classes.

The decision of the Board of Railway Commissioners in connection with the summer class rates automatically reduces the rates on export traffic via the ports of Montreal and Quebec.

For example:—The carriers proposed to advance the rates from Toronto to Montreal for export to the following basis:

1	2	3	4	5	6	Classes.
46	40	34.8	23.8	20.1	16.4	Cents per 100 lbs.

The reduced basis, which will take effect on the same day that the advanced basis was to have taken effect, is as follows:

1	2	3	4	5	6	Classes.
42	37	32	23.8	20.1	16.4	Cents per 100 lbs.

You will see that the reductions are on the first three classes. However, the rates on the other classes are lower than the domestic basis.

ENCOURAGING EMPLOYES.

How many chief engineers, asks *Power*, encourage their men by expressing satisfaction when work has been well done? How many comment favorably upon the personal appearance of their assistants? What would be the result if appreciation were expressed? Nothing will encourage a man to do his best so much as the knowledge that his work has received recognition. Nothing will cause a man to become disgruntled so much as an attitude of non-appreciation on the part of the chief.

An assistant engineer need not fear being classed as a "dude" because he prefers to go about his work with clean clothes. If he does not keep himself clean and neat, the chances are that he will be slovenly about his work. Some engineers have the appearance of coal passers, and their plant presents the appearance of having seen better days. No self-respecting man can be content to work in a dirty engine-room where it is impossible to keep himself in a half-way presentable appearance.

TARIFF

By J. R. K. BRISTOL

BOARD OF CUSTOMS DECISIONS.

Matters of Interest Decided by the Board during Month of April.

Dome snap fasteners of metal, such as used on ladies' dresses and attached to the garment by sewing, declared to be dutiable under tariff item 454—(general tariff rate 30 per cent., plus the war tariff of 7½ per cent.), in effect on and from 16th April, 1917.

Motor, attached to printing press, per illustration in *re* the Kelly Press, declared to be dutiable under tariff item 453—(general tariff rate 27½ per cent., plus the war tariff of 7½ per cent.)

Stickle automatic steam control apparatus for paper machines, declared to be dutiable under tariff item 453—(general tariff rate 27½ per cent., plus the war tariff of 7½ per cent.)

Electric welded furnaces, to be used in the manufacture of boilers for ships or vessels, declared to be dutiable under tariff item 454—(general tariff rate 30 per cent., plus the war tariff of 7½ per cent.)

Fresh beef and fresh pork, which have been sprinkled with salt but are not cured meats, declared to be dutiable under tariff item 7.

DEPARTMENTAL RULINGS.

Exemption from Duty of Several Articles Used in Industry.

Departmental ruling, rating certain lacquer thinners under tariff item 156 (Appraiser's Bulletin No. 1338), is cancelled by Board of Customs Decision of 9th January, Appraiser's Bulletin No. 1417.

Small samples of fabric of no commercial value, declared to be exempt from war tariff duties.

Picture paper, per sample, for covering paper boxes, ruled to be dutiable at 22½ per cent., plus the war tariff, under item 180.

Raw cotton imported to be used in the manufacture of cotton duck, for use as aprons or carriers on harvest binders, declared to be exempt from the war tariff, and refund authorized.

BRITISH PROHIBITION ON GOODS CONTAINING ENEMY MATERIALS.

By recent order of the Department of Import Restrictions, London, England, after April 1st, no goods of neutral manufacture in the production of which materials and labor of enemy origin amounting to more than 5 per cent. of the cost have been used, will be admitted into the United Kingdom, except under license.

BRITISH INDIA.

The Customs tariff of British India in respect to imports of cotton goods has been increased from 3½ per cent. to 7½ per cent.

DUMPING.

One of the Swiss business papers (the *Journal Suisse des Commerçants*) has recently published an excellent article by L. P-D., on Dumping; which is well worth consideration at a moment when the attention of all business men is turned towards the economic conditions likely to prevail after the war. The article is practically a review of a book which has lately appeared in France under the title of *Les méthodes allemandes d'Expansion économique* (German methods of economical expansion); the author of this book is Monsieur Henri Hauser, Professor at Dijon University, and he presents his case judiciously and impartially. His statements appear to be based on indisputable facts, connected with the commercial and industrial policy of Germany. M. Hauser strikes a warning note to which the Allies would do well to give heed, one of the most forcible chapters in the book being devoted to the question of "Dumping," which merits special attention.

"Dumping" means the establishment of two scales of prices for any article of which there is overproduction creating thus the necessity for exportation. There is a relatively high price for the home market and a relatively low one for the foreign market. This system was practised first of all by Great Britain, but only as a temporary measure in exceptional circumstances, and it has been left to German business Trusts to make it a regular part of their political economy and a permanent system. The question for them is the elimination of all competitors belonging to other manufacturing nations on the export market. How have they solved this problem? Their method has been to give up all idea of a big profit, or indeed any profit, to forego all profit, and to continue this sacrifice until their competitors—native or otherwise—have been got rid of!

But the object of "dumping" is not limited merely to getting rid of another competitor on a foreign market. Dumping often consists of crushing out a national industry in the country in question, or of stifling it in its early stages. For instance, the German Coke Trust sold a ton of coke in Bohemia for Mk. 8.17, while in Germany it was sold for Mk. 17. The German Steel and Iron Trust fixed the price at Mk. 140 to 145 per cwt. for the home market and at Mk. 100 to 120 for the foreign market, and so on. As a result of a similar policy the industry of shipbuilding was developed in Holland, and a great part of the boats intended for navigation on the Rhine in Germany were built in Holland; for even taking into account the Customs duties and the cost of transport, it was cheaper for the German shipowners to obtain Dutch boats in Holland.

However advantageous dumping may appear to be to an importer in a foreign country, sooner or later these benefits will prove disastrous to the importing country. The English Free Trader is too apt to think of dumping as a cause of impoverishment for the dumper and the enriching of the dumped. He would do well to look ahead and see if, in the long run, his trustfulness will not end in the final and complete disappearance of the industry concerned, while he himself becomes dependent exclusively on foreign manufacturers, who then more than recoup themselves for the relatively low prices charged at the outset.

Reintroduction into Germany of German products bought abroad is favored by the German Government. This creates a sort of *inverse* dumping which in the long run may be prejudicial to German interests. For dumping of this kind is a double-edged weapon; though often successful in destroying foreign industry on its own ground, it yet in the long run may bring about the ruin of one or other of the home trusts. Thus some years ago the more selfish dumpers in Germany were severely criticized for being indifferent to the common

interests of their country, and these criticisms were specially addressed to the manufacturers of raw materials. An agreement was finally come to in 1903, fixing a scale of bonuses proportional to the degree of finish of the goods exported, and these concessions were paid over to the Trade syndicates. These in their turn accorded a bonus to such of their members as were desirous of exporting goods. The amount of the bonus was fixed by arbitration, on the basis of sales effected by each of the syndicates; decisions being based upon the consumption of raw material. The following example may be cited: In May, 1913, the Steel Syndicate having raised its bonus to exporters from Mk. 10 to Mk. 15, the Machine Syndicate at once lowered the export prices so as to re-establish the balance. When, a few months later, the bonus for coke and coal had been lowered to Mk. 1 the Cast-iron Syndicate raised its prices proportionately, *i.e.*, Mk. 1 was added to its export prices.

This complicated system flourishes, thanks to the fact that the different Trusts of German industry constitute among themselves a sort of gigantic super-trust, whose business it is to adjudicate on the amount of the bonus, determine spheres of action, and settle differences. And by fixing the bonus higher in periods of slump and lower in periods of prosperity, dumping tends to correct its own excesses. Sooner or later the consequences of such organizations are felt by the importing countries, and little by little their own industries are ruined or prejudicially affected, and England, Belgium, America, and France have good reason to acknowledge that in more than one domain German dumping has wrought havoc with one or other of their industries. Is it not high time to look the danger squarely in the face and decide that —after the war—these countries shall no longer be dumping-grounds for enterprising German manufacturers?—From *Monthly Record*, Manchester, Eng.

MacKinnon, Holmes & Co., Limited, Sherbrooke, Que., have recently received an order for a quantity of steel bow plates to be used in connection with troop scows being built in Canada.

FOREIGN TRADE OF CANADA.

IMPORTATIONS.

(Comparison 1915, 1916, 1917.)

	Month of March.			Twelve Months Ending March.		
	1915.	1916.	1917.	1915.	1916.	1917.
Dutiable goods	$23,751,511	$34,780,853	$54,571,450	$279,717,254	$289,332,729	$461,708,206
Free goods	16,659,873	27,253,752	47,764,436	175,654,117	218,450,632	383,622,697
Total	$40,411,384	$62,034,605	$102,335,886	$455,371,371	$507,783,361	$845,330,903
Coin and bullion	446,795	531,383	1,632,950	131,992,992	34,260,202	28,081,120
Grand total	$40,858,179	$62,565,988	$103,968,836	$587,364,363	$542,043,563	$873,412,023
Duty collected	$8,557,853	$12,171,305	$17,072,384	$79,183,489	$103,928,753	$147,623,230

EXPORTATIONS.

(For March.)

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$5,997,010	$5,636	$8,004,843	$54,838	$9,980,711	$11,850
The Fisheries	2,065,564	8,674	2,054,493	23,255	2,373,258	94,653
The Forest	3,440,941	5,344	3,247,691	1,466	3,614,385	1,217
Animals and their Produce	5,476,249	22,424	8,626,681	309,025	14,809,941	1,584,969
Agriculture	12,438,145	693,116	17,852,426	39,185	21,962,252	1,011,089
Manufactures	15,600,790	1,838,866	47,013,766	595,149	69,239,486	1,145,602
Miscellaneous	100,223	196,356	1,614,338	142,992	435,280	260,318
Total merchandise	$45,118,922	$2,770,416	$88,414,238	$1,165,910	$122,415,313	$4,109,698
Coin and bullion	.....	21,793,481	.....	192,274	107	228,820
Grand total exports	$45,118,922	$24,563,897	$88,414,238	$1,358,184	$122,415,420	$4,338,518

EXPORTATIONS.

(Twelve Months Ending March.)

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$51,740,989	$325,548	$66.589,861	$7,329,537	$85,616,907	$219,514
The Fisheries	19,687,068	131,669	22,377,977	213,307	24,889,253	429,502
The Forest	42,650,683	486,098	51,271,400	426,884	55,907,209	488,091
Animals and their Produce	74,390,743	2,565,259	102,882,276	2,936,914	127,795,468	7,517,342
Agriculture	134,746,050	35,604,014	249,661,194	17,213,996	373,413,701	7,451,069
Manufactures	85,539,501	9,529,024	242,034,998	8,017,225	477,399,676	9,913,090
Miscellaneous	563,802	3,382,061	6,792,932	1,551,569	6,353,554	1,816,724
Total merchandise	$409,418,836	$52,023,673	$741,610,638	$37,689,432	$1,151,375,768	$27,835,332
Coin and bullion	667	29,365,701	315	103,572,117	86,087	196,460,961
Grand total exports	$409,419,503	$81,389,374	741,610,953	$141,261,549	$1,151,461,855	$224,296,293

Condensed Advertising

FOR SALE.

For sale, in first-class working order, second-hand General Electric Direct Current Generator, 35 k.w., 220 volts, arranged for belt drive, complete with sliding base, etc. Address Canada Forge Company, Limited, Welland, Ontario.

TRUCKS FOR SALE.

Trucks—A number of second-hand trucks, manufactured by the Weston Manufacturing Company, Limited, Ayr, and Wm. and J. G. Greey, Toronto. Approximate size 2 ft. 6 in. x 7 ft. Price $7.50 each f.o.b., Toronto. In good shape. The A. B. Ormsby Company, Limited, Toronto.

BUSINESS ASSOCIATE WANTED.

Man about 30, with engineering and commercial training, experienced in mine and smelter requirements, including structural and cast steel work. A man with office experience and capable of soliciting business preferable. Reply to Box 42, INDUSTRIAL CANADA, Toronto.

ANNUAL MEETING.

The annual meeting of the Canadian Manufacturers' Association will be held in Winnipeg on June 12, 13 and 14, and an urgent call has gone out from the president for a large and representative meeting. Important business is to come before the convention and the attendance of a large number of members is urgently desired.



DO-ME-KO represents a Complete Line of Babbitt and White Metal Products, especially designed to meet exacting needs of modern machinery.





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Air Compressor

Capacity—320 cubic feet of free air per minute.
Make—Pokorny & Wittekind, Class L.6, two stage, belt driven, air compressor with intercooler and unloader valve.
Piston Stroke—15.75".
Piston Diameter—18.1"—15.2" (differential piston).
R.P.M. of shaft—150.
Power consumed on compressor shaft at 105 lbs. discharge pressure, 60 to 62 H.P.
Efficiency; volumetric—93-96.
Efficiency; mechanical—84-87.
Suction—7" diameter.
Discharge—3½" diameter.
Belt pulley diameter—80".
Belt pulley width—13½".
Approximate weight—9,500 lbs.

Overhead Trolley System

2-Ton Capacity.

Unit No. 1—About 400' 0" long with 5 right angle bends; points of support, 16' 0" apart; 1 cross over; 9 wall brackets for supporting tracks; 7 heavy "I" beam supports, and 1 "H" column; also 1 pneumatic lift section for raising and lowering.

Unit No. 2—About 400' 0" long, with 1 right angle bend; points of support about 20' 0" apart; 6 heavy "I" beam supports, and 5 "H" columns; 1 swing jib; also 2-ton capacity carrier trolley.

This carrier system is in first-class shape, and is complete with all necessary attachments to building.

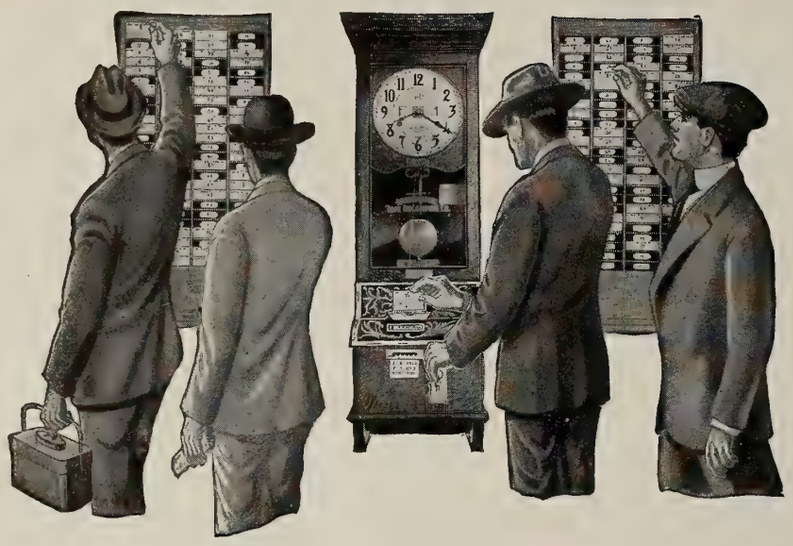
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Overcrowding here causes ill-will and a waste of time. Often it's time you've paid for.



An over-loaded Time Recorder is as bad as an overloaded car. Hard on machine and users.

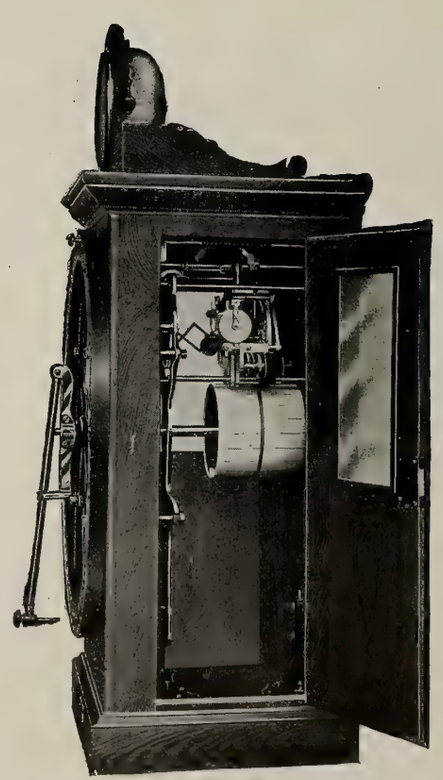
Don't overload--it costs too much

The mental attitude of the employee when using the Time Recorder is worth considering. Experience shows it is better to "stream" them along rather than let them "bunch." This means having the proper equipment.

Say a firm spends $600 on a time recording equipment to serve 450 employees when they should have spent $1,000.

Saved $400 perhaps. Did they? What happens? The employees get sore at having to wait their turn at the Recorder. They may get into the habit of quitting a few minutes earlier in order to be amongst the first at the Time Clock. Suppose 450 people did this and lost an average of only 2 minutes each day. That means 15 hours, at say 40c, or $6 per day loss to the plant. Pretty heavy tax on a $400 saving, isn't it? Don't do it. An efficient Time Recording system is too important to be skimped.

We sell them on easy terms—they can save their instalments every month. Send for our latest folders and prices.



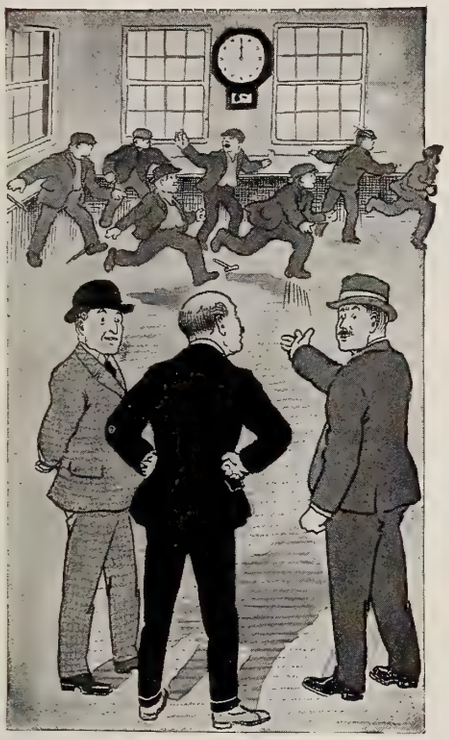
An International Dial Time Recorder.

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VANCOUVER: 817 Pender St. W.
MONTREAL: Cartier Bldg. Cor. McGill and Notre Dame Sts.

You can see this daily, at each shift, in many plants



The manager was showing his visitors around the factory just at 12 o'clock noon.

The employees were leaving.

"How do your employees manage to get to the exit at 12 o'clock? What time must they quit working?"

"Oh, a couple of minutes to 12, I guess."

"Well, by jove, that must cost a lot of money in the course of a year."

That was just before the manager woke up and decided to install

INTERNATIONAL TIME RECORDERS

He found he had successful competitors and that they used International Time Recorders.

Working time is one of the biggest "buys" in your business. Why not get all of it you pay for?

The International gives you control over the three underlying factors of your business—men, minutes and money.

The International Dial Recorder shown at the right is one of the most modern machines of its type made. We also make Card Recorders, Cost Recorders and a full line of electrically-operated time equipment: master clocks, secondary clocks, bell-ringing devices, etc., etc.

Why not write us to-day for folders and information about a Time Recording System to suit your business?



INTERNATIONAL DIAL RECORDER WITH GLASS WALLS

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CANADA'S WORK IN FOREST RESEARCH

By W. B. CAMPBELL
Assistant Superintendent Forest Laboratories, Montreal

At the present time the necessity of scientific research in industrial work is universally acknowledged, but at the same time there is an almost universal lack of definite knowledge of what is really meant by industrial scientific research. The fact that the marvellous progress made by Germany in the past twenty-five or thirty years is due most largely to the work of her chemists leads many people to suppose that chemists need only be presented by an industrial problem and they straightway produce the solution in their laboratory. Such a view overlooks the years of patient toil and the hosts of disappointments that come to the investigator before he produces tangible results. The research leading to the substitution of artificial indigo for the natural product, for instance, took about twenty years' time of many gifted men and the expenditure of about five millions of dollars before there was any return. Such a case is not at all exceptional and differs only in degree from many other problems solved by intensive scientific research.

Many of the investigations now under way at the Forest Products Laboratories are intended only to cover the immediate problem before us but others are designed to proceed until a knowledge of the basic principles of the subject is obtained. Such, we consider, is the most real purpose of our institution. The wood-using industries of our country are not of such size as to warrant their establishing individual laboratories of this kind, and if the Forest Products Laboratories of Canada can furnish to these industries scientifically accurate information concerning their materials and products and the manufacture of those products, then we of the laboratories will consider that we have not only earned our salaries but that we have done our little bit to promote the industrial greatness of Canada.

A very brief mention of a few of the investigations which are now being carried on will suffice to show what we are attempting at present, though we are considerably handicapped by the absence of some of the best of our staff who are at the front and the impossibility of getting other suitable men at this time.

Some of the leading investigations now on hand are as follows:—

A comparative study of the mechanical strength and physical properties of all Canadian woods. Tests are made on a large number of small clear specimens cut in the same way from several trees of each species selected in the forest by Forestry Branch experts. These tests are being made on the same system as a similar series of tests under way at the United States Forest Products Laboratory so that our results will be directly comparable with theirs, and when both series are complete the data will cover all the North American woods.

A study of the comparative value and characteristics of mine timbers available for use in the coal mines of Nova Scotia. This includes strength tests and a study of the decay of such timbers both in the mines and in storage. Already considerable improvement has been made in storage conditions so as to greatly decrease the loss from rotting in the piles.

A study of the fundamental factors involved in the drying of wood and phenomena related to change of moisture

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" " 1916	68,072,210
Taxable Assessment, 1906	$ 5,889,734
" " 1916	50,969,645

Post Office Business Returns.

1914	$2,746,154
1915	3,064,312
1916	6,377,986

Bank Clearings.

1910	$50,739,159
1915	87,122,611
1916	124,349,589

Customs Receipts.

1915	$ 653,915.00
1916	1,505,019.21

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content such as shrinkage, hygroscopicity, migration of moisture in the wood, heat conductivity, etc.

A study of methods looking for the utilization of waste sulphite liquor. About 600,000 tons of wood per year is consumed in the manufacture of sulphite pulp in Canada and approximately one-half of that amount of organic material is thrown to waste in the liquor. The problem of finding a use for this material is a very complicated one, and although a great deal of research has been done on the subject by various English, German and American chemists only results of moderate value have been obtained. At present the work of these laboratories is confined to the compilation of all available information in connection with this subject, leaving experimental work to be done later on.

A study of the fundamental factors involved in the beating of paper pulp. This beating process is a very important one in the manufacture of paper, particularly in the case of finer grades, and is one concerning which very little is known. A full understanding of the reactions involves a very complete knowledge of the colloidal characteristics of cellulose, thus leading to very involved questions of physical chemistry. This research is one of the type mentioned as being of so complicated a nature as to necessarily extend over several years but is one which we are peculiarly well situated to attempt.

A study having for its object the discovery of a commercially feasible process of creosoting Jack pine and Eastern hemlock for use as railway ties.

An investigation as to the feasibility of chipping, drying and baling pulpwood for shipment and a determination of the value of chipped and dried wood as compared with round wood. There is a possibility that there may be a saving in freight effected which will make possible the utilization of forest areas which are now going to waste.

An investigation of the chemical composition of wood, particularly of those woods which may be of use for paper pulp. This work involves the testing and standardization of methods of analysis and the examination of the composition of several important species both in the green condition and after different degrees of seasoning.

An investigation of the possibility of treating prairie-grown woods so as to make possible their use as fence posts.

A study of the oils produced by the destructive distillation of wood, both resinous and hardwood, with reference to their use in ore flotation.

A study of the relative durabilities of Canadian woods when exposed to various kinds of wood-destroying fungi.

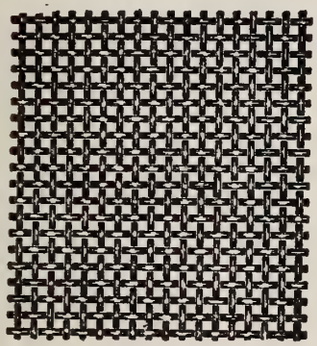
A study of the fibre dimensions of Canadian woods. This is particularly important to the paper industry but is also of value in other work as well as being of considerable scientific interest.

A study of the sulphite cooking process and the factors involved in cooking various species of wood for pulp. It is hoped that a thorough study of the process from a scientific point of view combined with practical experience will point out ways in which the process can be improved.

The investigations mentioned do not include any but the outstanding problems. Besides these there is submitted to the Laboratories a continuous flow of minor questions which the laboratory equipment enables us to answer quite readily. Questions regarding the identification of wood from samples, for instance, are answered daily for people all over the country at no cost to them.

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CHEMICAL INDUSTRY IN SOUTHERN CALIFORNIA.

By Ellwood Hendrick,
American Chemical Society.

Mr. Arthur W. Kinney, of the Los Angeles Chamber of Commerce, published an article in the Los Angeles *Sunday Times* which is reprinted in the April number of the *Journal of Industrial and Engineering Chemistry* of the American Chemical Society. He tells of what has been started in chemical industry in Southern California since January 1, 1916.

Here are the potash plants, designed to extract potash and iodine and some cases to produce acetone from kelp. Of course potash is what they are after chiefly. One of the big powder companies has a $1,600,000 plant with 2700 horse power, docks, barges, harvesters, etc., and engages 16 chemists in direction and research. The works cover several acres. Seven other concerns have begun operations with kelp products—all, of course, with potash in view. The United States Department of Agriculture is also erecting a 200-ton kelp plant in Santa Barbara County to give the potash from kelp question a thorough tryout. Potash as a by-product is also made by one of the Portland cement companies, and by the various beet sugar factories of California.

And yet we have a potash famine upon us with only partial relief in sight until the German ports are opened. Vast quantities are needed now, this minute.

Another company makes dyes extracted from the orchila weed. In Riverside County various members of the California Fruit Growers' Association have a plant in active operation making citric acid from cull lemons. This was formerly imported from Italy. Three new concerns are making strontium nitrate, chiefly for red fire for fireworks and for railway signals. Another concern makes orchard sprays and still another chloride of lime and chlorine. A lumber company at Escondido, which operates in eucalyptus lumber, is extracting eucalyptus oil which is largely used in pharmaceutical preparations. Other concerns are turning out tungsten, molybdenum, antimony and some vanadium products. Crude sulphur is brought in from Nevada.

The chemist is at work in Southern California.

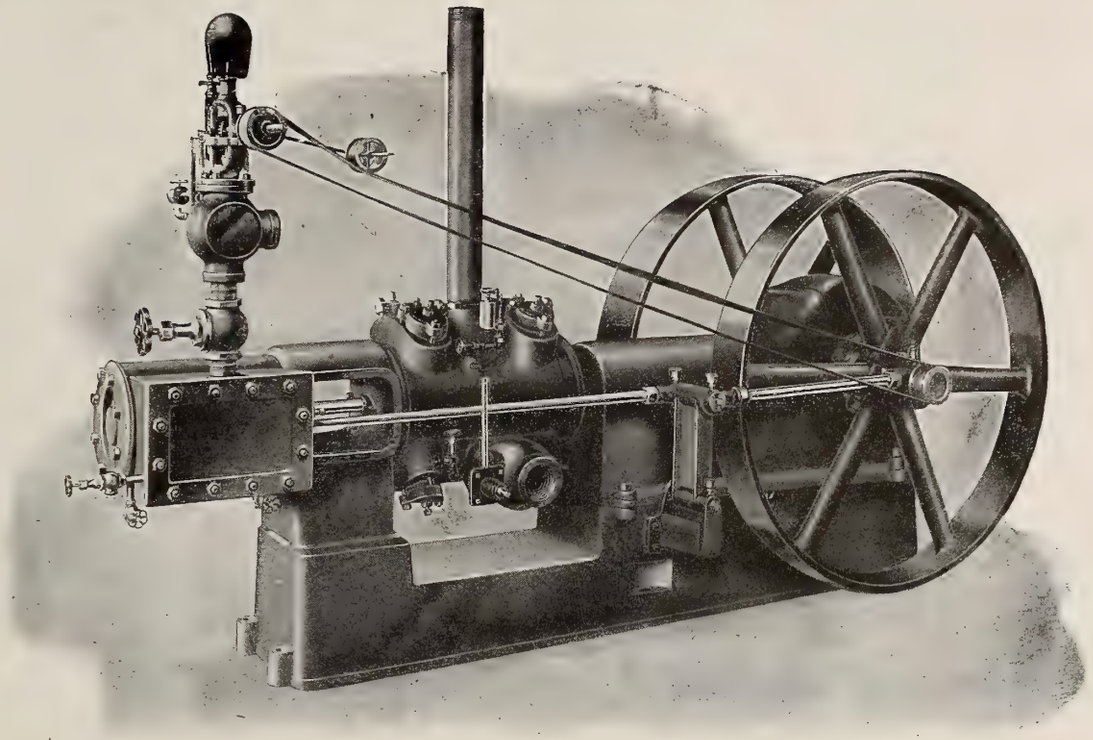
DUST EXPLOSIONS.

By Dr. H. E. Howe,
American Chemical Society.

An important example of the practical application of research is given in an article on "Inflammability of Carbonaceous Dusts," by H. H. Brown, which appeared in the *Journal of Industrial and Engineering Chemistry.*

It has been recognized for some time that many explosions were due to dust, but in the case of mines it is only within the last thirty years that it has been fully recognized that coal dust alone is explosive, even though there be no gas present. Experiments have proven that many other dusts are just as easily ignited and fully as capable of explosion as is coal dust, in fact no mill handling material containing carbon is immune from the possibility of an explosion. The work, therefore, which has been undertaken to determine conditions under which such explosions may occur, in order to know how to avoid them, is of fundamental importance in avoiding life and property losses.

Dusts may be divided in three general classes, according to Mr. Brown. They are, first, those which ignite and propagate flame readily from a very small source of heat, as for example, a lighted match; those which are readily ignited but which require a comparatively large source of heat and high temperature for the propagation of flame. Finally,



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those which are not capable of propagating flame under the ordinary factory conditions, either because they do not readily form a cloud of dust in the air or because they are contaminated with a large quantity of incombustible materials of which they are composed do not burn rapidly enough to cause an explosion. In the first class may be mentioned sugar, starch, flour, and malt. Examples of the second class are castor oil meal, mustard and bran, while in the third class cottonseed and soya bean meal fall as well as the dust which arises from cleaning the sacks.

It has been found that in many respects explosions arising from clouds of dust in the air behave very much like gas explosions. Great pressures are developed, the flame runs at a high velocity per second, and some of the dusts ignite at comparatively low temperatures.

Owing to the large number of variables in the problem, it has been difficult to devise an experimental apparatus in which such explosions could be studied under conditions sufficiently constant to make the results obtained at all valuable. Such difficulties as securing uniform clouds of dust, suitable means of igniting the dust, temperature measurement, pressure measurement, method of introducing the dust into the chamber, etc., have been overcome and the way prepared for tests on a larger scale, which will aid in the interpretation of the results obtained in the first experiments. The data thus far obtained indicate that most of the carbonaceous dusts have a higher degree of explosibility than Pittsburg coal dust and that the dust is more easily ignited.

All dusts composed of carbon-bearing materials have a high degree of explosibility when occurring in a cloud in the air and, therefore, a dangerous condition exists, not only where such material is in a cloud, but also if in a position where it may readily be thrown into suspension in the air.

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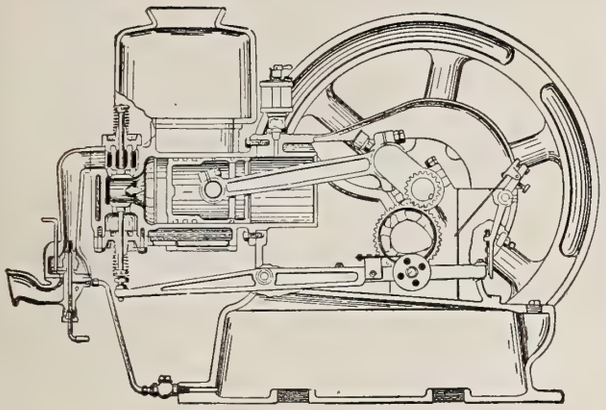


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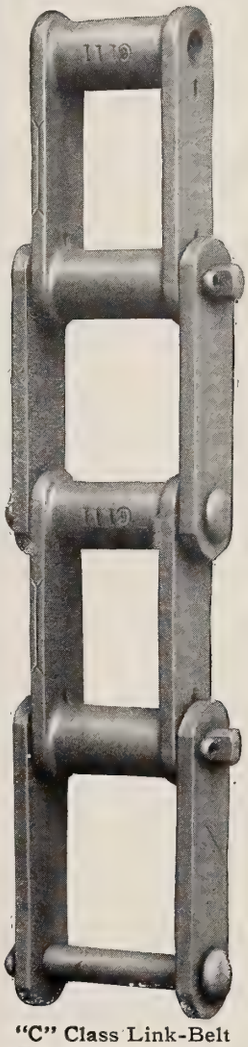
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DOMESTIC TRADE ENQUIRIES.

820. Veneers.—A manufacturer in the Eastern Townships is in the market for a considerable quantity of ⅜-inch veneers, preferably of maple, 3 or 4 ply, but other suitable woods might do. These veneers are to be used as chair backs, and quotations and samples are required.

821. Fossil Flour.—A Toronto manufacturing firm would like to hear from producers of fossil flour.

EXPORT TRADE ENQUIRIES.

822. Agency.—An export merchant in Boston, with connections in China, Russia, India and Africa, wishes to represent Canadian manufacturers of and dealers in timber and other natural products.

823. Agency.—A firm of merchants and importers in the Dutch West Indies are desirous of making arrangements with Canadian manufacturers of chairs, trunks and bags, foodstuffs of all sorts, enamel ware and paint. Further information and references can be furnished on application.

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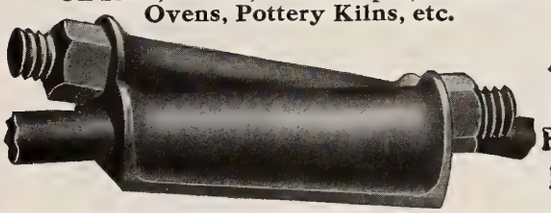
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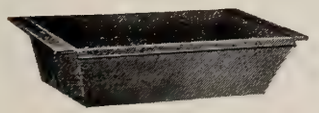
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Write for Catalogue C and Price List.

824. Boots and Shoes.—Russian concern of excellent reputation solicits correspondence, preferably in the French language, from boot and shoe manufacturers disposed to give exclusive agencies for Russia.

825. Twist Drills, Hack Saw Blades.—French house specializing in the articles mentioned has large orders to place both for twist drills and hack saw blades for hand and machine use. Offers should be in the French language.

826. Small Flour Mills.—Correspondent in Mexico is in the market for the smallest possible cylinder flour mill, capable of being operated on from 6 to 7 h.p. Must produce good quality flour. Offers should be in the Spanish language.

827. Hardware.—Agent of good reputation in Spain wishes to obtain the representation of hardware lines. Correspondence in the Spanish language solicited.

828. Hardware, Enamelled Kitchen Utensils and Glassware.—Dealer in Colombia wishes to receive direct offers from manufacturers of all kinds of hardware, enameled kitchen utensils and glassware. Spanish correspondence solicited.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

Canadian Exporters' Note.

In view of the fact that the prohibited list of imports into the United Kingdom is subject to change at any time, Canadian Exporters should communicate with the Deputy Minister, Department of Trade and Commerce, Ottawa, before making arrangements to ship any of the subjoined articles to the United Kingdom.

829. Cereal Foodstuffs, Exclusive of Wheat and Maize.—A Liverpool firm of produce importers asks to be placed in touch with exporters of the above.

830. Wire, Wire Nails, Shoe Rivets.—A London firm asks to be placed in communication with Canadian manufacturers of wire, wire nails, shoe rivets, etc.

831. Motor Ploughs, Motor Tractors, Farm Implements.—A Dublin firm asks to be placed in communication with Canadian manufacturers of motor ploughs, motor tractors and farm implements generally.

832. Trade with Siberia.—A firm in Siberia, doing a general agency and commission business, is anxious to receive quotations and catalogues from Canadian manufacturers desirous of doing business with this market.

833. Wire Nails and Hardware.—A firm of Hong Kong commission agents, one of whom is a Canadian with experience in China and a knowledge of the Chinese language, wishes to make arrangements to represent Canadian importers in the Chinese market, and especially manufacturers of wire nails and all kinds of hardware.

834. Condensed Milk.—A Bristol firm of brokers desires to enter into communication with a Canadian concern in a position to do an export trade in condensed milk.

835. Pulp Board.—A Bristol firm wishes to be put in touch with a house in Canada manufacturing pulp boards for interior work.

836. Linseed Oil Cake.—A Liverpool firm, who are buyers of linseed-oil cake, asks to be placed in touch with Canadian manufacturers who can fill orders for export.

Old Tyme Pure Maple Syrup

AND

Maple Butter

SOLD EVERYWHERE

Maples Limited

Manufacturers and Refiners

TORONTO CANADA



The World's Best

Of all the pure foods made or sold in Canada, there is none that holds a higher place in the Grocers' esteem than

Windsor Table Salt

Made in Canada

It has been his standard of purity for years, and has always maintained its well-earned reputation as the "Canadian Salt without a fault."

THE CANADIAN SALT CO. LIMITED

This is the Trademark

HIGHEST GAS YIELD
IMPERIAL CARBIDE
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which represents the highest grade of carbide produced in a modern carbide plant where nothing but carbide is made. That

IMPERIAL CARBIDE

is a *superior* grade of Calcium Carbide is confirmed by the fact that it is meeting the exacting requirements of a rapidly increasing number of users.

We will gladly quote you on your requirements. Just write to

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PREMIER
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GALVANIZED SHEETS

Take this "Tip" from us :— There will be practically a famine in the matter of a supply of Sheet Iron during the next six months.

We may have in STOCK— GAUGES and SIZES which you can use.

Send us your specifications for best price and IMMEDIATE SHIPMENT of stock goods.

The Canadian Trade is our first and only concern.

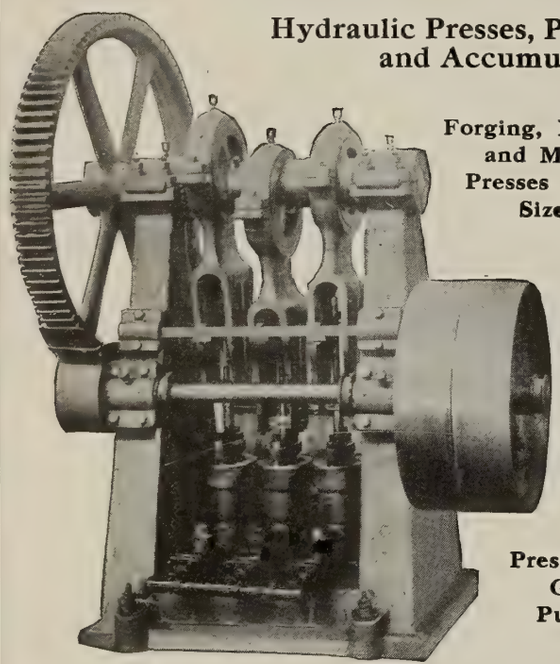
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PRESSES

Made in Canada

Hydraulic Presses, Pumps and Accumulators



Forging, Nosing and Marking Presses for all Size Shells

Presses for General Purposes

WILLIAM R. PERRIN, Limited
Toronto, Canada

837. Telephones.—A Newfoundland merchant inquires for Canadian manufacturers of telephones for departmental stores.

838. Canned Vegetables.—A Liverpool firm wishes to deal with Canadian exporters of the above.

839. Canned Salmon.—A Liverpool firm wishes to get into touch with packers of good red salmon for business on a large scale.

840. Boot and Shoe Eyelets and Hooks.—A British importing firm desires to get into communication with Canadian manufacturers of boot and shoe eyelets and hooks, and bifurcated rivets. Samples have been sent to the Commercial Intelligence Branch of the Department of Trade and Commerce.

841. Rubber Gloves.—A firm of importers of electrical goods at Manchester wishes to get in touch with Canadian manufacturers of red or chocolate-colored seamless rubber gloves. Their present requirements are 1,000 pairs, size 9, measuring 12 inches from edge of cuff to tip of longest finger, and weighing 6½ ounces per pair.

842. Enameled Ware.—A Trinidad firm desires the addresses of Canadian firms exporting enameled ware.

843.—Leather Purses, Bags, Letter-Cases, Photo-Cases and Leather Goods Generally.—A London firm wishes to get into touch with Canadian manufacturers who can supply ladies' leather purses (principally cheap grades), bags, letter-cases, photo-cases, and leather goods generally.

844. Leather.—Bath boot manufacturers desire to enter into communication with Canadian firms producing stout



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MARTIN

Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

Write for catalogue and sample. Give inside dimensions and weight of contents.

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Office and Factory - - 353 Pape Avenue, Toronto

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Prompt Shipment from Stock

BURLINGTON STEEL CO., Ltd.

HAMILTON - CANADA

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Rapid production is dependent on the use of ECONOMICAL TOOLS AND STEEL. It is safer ***not*** to specify High Speed Steel, but

Demand "Tyr," the Economy Steel

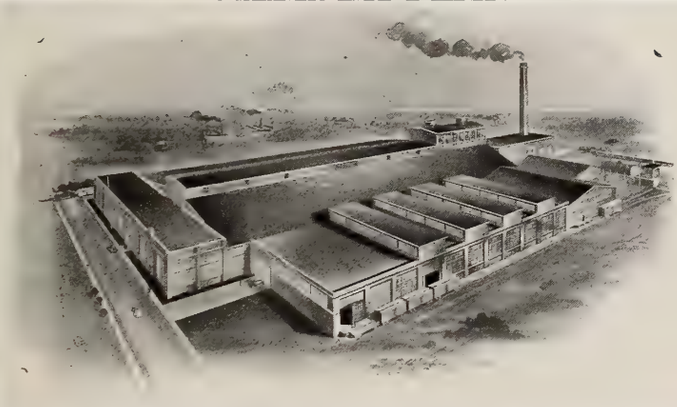
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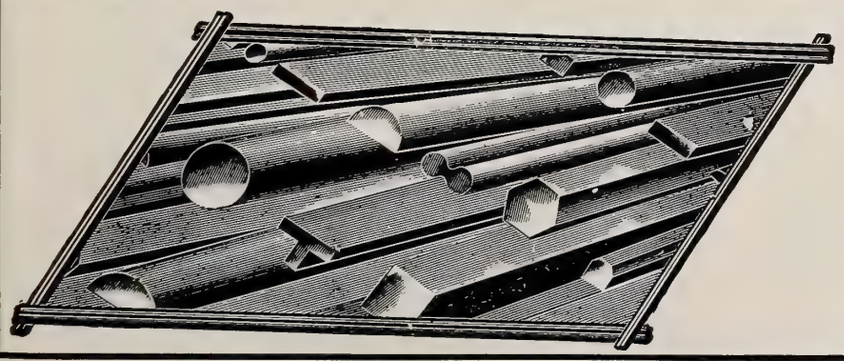
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UNION DRAWN STEEL CO., Limited

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MANUFACTURERS OF

Shafting

Rounds, Flats, Squares and Hexagons

LARGEST STOCK IN CANADA

Get prices before ordering elsewhere.

Facts to Remember When Ordering Files

"Famous Five" files are made in standard kinds and sizes. The kinds most called for are taper, slim taper, mill, flat, half round, round and square.

The sizes go by half inches, up to 6" in length on taper and slim taper, and in inches on other kinds up to 8", and then every 2" above that.

It is not advisable to order odd sizes like 6½" or 13" because it means readjusting machines. That takes longer time, whereas standard size files can always be had more promptly.

The regular cuts are bastard, second cut and smooth. The cut is determined by the number of teeth per inch.

These facts about files are not generally known, but it is well to bear them in mind when ordering.

Specify "Famous Five" files on your orders to jobbers.

They are:



brown hides suitable for heavy boots and bark-tanned leather, with a view to making connections for the obtaining of future supplies.

845. Gasoline Engines.—A Scotch firm, now purchasing the above from the United States, wishes to get into touch with Canadian exporters.

846. Milk Powder.—A Glasgow firm is on the market for the above.

NATIONAL SERVICE LITERATURE.

One of the most valuable of recent literary contributions to the great cause is a booklet by Prof. Stephen Laycock, entitled, "National Organization for War." In this booklet Dr. Laycock makes an urgent call for national thrift and national saving. He attacks in vigorous style the evils of extravagance at this crisis in Canada's history, and by trenchant phrase and apt illustration disposes of various common errors in regard to individual spending of money during war time.

This pamphlet was originally published by Dr. Laycock himself, but the National Service Board were so convinced of its value in connection with their thrift campaign that they have had it republished and have undertaken its distribution. Copies may be obtained by writing to the Secretary of the National Service Board at Ottawa, or by applying to the National Service Director in any province.

DEFECTIVE FIRE FIGHTING APPARATUS.

The Pennsylvania Department of Labor and Industry reports the finding by its inspectors throughout the State of many establishments wherein fire fighting equipment is unfit for service. The Department deplores the feeling prevalent that equipment of this kind if once placed in position will not need attention until a fire occurs in the establishment. As a result, in many cases when a fire does occur and employees try to use the equipment which is furnished, they find that it is unserviceable.

In one establishment a fire had occurred three weeks before the time of the inspector's visit. He found half a dozen of the chemical type of fire extinguishers in the establishment that had not been recharged since the fire. These extinguishers had been used very effectively in fighting the fire. But for them, the fire might have destroyed the establishment. Notwithstanding the great service they had rendered, no attention had been given them since the fire. They would have been absolutely useless in the case of a second fire.

One inspector of the Department found over one hundred fire extinguishers inoperative or useless in the various establishments which he visited during a single month.

Inspection has also revealed the fact that much fire hose has been in position for such a long time, or has been used for other purposes, that it has rotted, and would be unserviceable if water should be turned into it. In some cases, the hose had been removed entirely, and its absence had not been noted until the attention of the management was directed to this fact. In other cases the nozzle was found to have been removed, and could not be found.

In a special bulletin on this subject, the Department points out that apparatus of this kind, to be of any value, must be ready for instant use. The original cost of this equipment is comparatively high, and, if it is not properly maintained, is a total loss to the owners; not only that, but the factory itself is at the mercy of any fire through a false sense of security.—*N.F.A.P. Bulletin.*



We manufacture Babbitt Metal for every purpose.

Our XXX Genuine Arctic

is especially adapted for

Heavy Duty Work

such as Marine and Automobile Engines.

Tallman's Special

For General Machinery Bearings.

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Tallman Brass & Metal Co.

HAMILTON, ONT.



Garage Door Hardware of all kinds for any purpose



Fire Door Hardware—All Styles with Underwriters' Label



CARRIER SYSTEMS
I-Beam or Trolley

Save Money on Your Factory Transportation



BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

Richards-Wilcox
CANADIAN COMPANY, LTD
LONDON, ONTARIO.



"R-W" Trolleys are best for all sliding doors

IMPERIAL GENUINE BABBITT METAL *The Highest Grade Manufactured*



Made specially for all HIGH SPEED, HEAVY ENGINES and EXTRAORDINARY HARD WORK

Manufactured and guaranteed to give excellent service by

THE CANADA METAL COMPANY, Limited, FRASER AVENUE TORONTO, Hamilton, Montreal Winnipeg, Vancouver



$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

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J. R. BAXTER & CO., LTD. Montreal	H. W. PETRIE LTD. Toronto	McDOUGALS LTD. Ottawa
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Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO, ONT. CANADA

When writing advertisers, please mention INDUSTRIAL CANADA.

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Calgary.

Alberta Milling Company plan the erection of a flour mill

Edmonton.

On April 5th the mattress factory of the Edmonton Tent & Mattress Co., Ltd., was destroyed by fire at a loss of approximately $5,000. The business was immediately carried on by the company by securing other premises, and the next day they were making mattresses as usual, although under considerable difficulties. On April 17 a contract was let for the erection of a new brick factory, 50 x 50 feet, and it is now well under way. Mr. Kenneth, the manager of the Edmonton Tent & Mattress Co., Ltd., is Chairman of the Edmonton section of the Prairie provinces branch.

Lethbridge.

The Imperial Oil Company plans extensions to its plant here.

The Ellison Milling Company anticipate erecting a new storage elevator.

BRITISH COLUMBIA.

Ocean Falls.

The Pacific Mills Company, Limited, who have almost completed their paper plant at Ocean Falls, have commenced the addition of a second and larger unit, to be erected directly across Link River from the new buildings. The second unit is to be about 10 per cent. larger than the first, and will have a capacity of 225 tons per day. When completed the mill will be one of the largest in the world. It is estimated that between 600 and 700 men will be employed when the two units are complete. Most of the output will be kraft paper. Within fifty or sixty miles of the townsite the Crown Willamett Paper Company, the parent company of the Pacific Mills Co., Limited, own between 4,000,000,000 and 6,000,000,000 feet of timber, mostly spruce and hemlock. A. B. Martin, managing-director, Vancouver, who returned recently from a two weeks' stay at the plant, reports that construction is being rushed in all departments and satisfactory progress is being made, despite the very unfavorable weather conditions still prevailing.

MANITOBA.

Gladstone.

The plant of the Echo Milling Company was recently destroyed by fire. Loss is estimated at $115,000.

Winnipeg.

The Manitoba Pulp and Paper Company, Limited, plans to erect and operate a plant at some convenient point in Manitoba. The company already has an option on 15.73 acres in Winnipeg, and is asking the city council for certain concessions. The company is capitalized at $1,000,000, and plans have been prepared for a large mill. From 1,500 to 3,000 horse-power will be required.

H. & D. Corrugated and Solid Fibre Board



CONTAINERS will save on your transportation charges, save your floor space, cut down packing expenses, and give you positive protection against loss from damage and pilfering. Write for prices and samples.

The Hinde & Dauch Paper Co. of Canada, Limited, Toronto, Canada

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Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
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Special Woodworking

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TRADES AND LABOUR BRANCH

NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.

D. M. MEDCALF, Chief Inspector of Steam Boilers.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

W. C. McGHIE, Chairman of Board.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

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Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. CORRESPONDENCE INVITED.

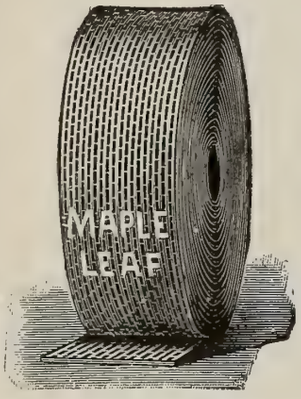
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The best on the market for **Transmission of Power, Conveying, etc.** Also **"Maple Leaf" Belt Dressing,** which is unexcelled, and equally good for using on all kinds of belting.

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DOMINION BELTING CO., Limited

HAMILTON, CANADA

Quebec Branch, 51 Duluth Building, Montreal

The Paulin-Chambers Company, Limited, 311 Ross Avenue, have purchased a site at Pacific and Pauline streets, on which they intend to erect a factory addition.

NEW BRUNSWICK.

St. John.

It is understood that negotiations for a site within the city limits for the construction of the proposed shipbuilding plant have been practically concluded, and that definite announcement of when a start is to be made on the erection of the works will be made at an early date. Thomas Nagle is the organizer and promoter of the company.

ONTARIO.

Belleville.

The evaporating plant of R. J. Graham, on the east side of Front Street, was destroyed by fire. Loss on building and contents is $300,000.

Deseronto.

The Dominion Hardwoods, Limited, are considering the erection of an enameling plant. Work will start in April, and the president, Charles Magie, will purchase all material and equipment.

Dundas.

Contract has been let for the erection of a $9,000 office building for John Bertram and Sons Company.

Goderich.

Tenders are being received for plate sheds in connection with the erection of a dry-dock and shipbuilding yard for the Goderich Dry Dock and Ship Building Company.

633-661 EASTERN AVENUE



ESTABLISHED 1852

The Largest Patent Leather Manufacturers in the British Empire

A. R. CLARKE & CO., LIMITED

MONTREAL TORONTO QUEBEC



Cut of 60-inch "Extra" Double Belt
Made by The J. C. McLaren Belting Co., Limited.

WE ARE HEADQUARTERS FOR ALL KINDS OF

BELTING
LACE LEATHER
CARD CLOTHING
REEDS AND
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ABSOLUTE SATISFACTION GUARANTEED

The J. C. McLaren Belting Co., Limited

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Branches:
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Made in Canada



From British Stock

"GENUINE OAK"

LEATHER BELTING

"D.K."

BALATA BELTING

Guaranteed to Give Satisfaction

D. K. McLAREN LIMITED

TORONTO MONTREAL ST. JOHN, N.B.
847 Beatty Street, VANCOUVER
Engineer's Supply Co., 123 Bannatyne Ave. E., WINNIPEG

LEATHER BELTING

Made in Canada

J. L. Goodhue & Co., Limited

DANVILLE, QUEBEC

Manufacturers of
SUPERIOR QUALITY LEATHER BELTING AND LACE LEATHER

QUALITY

Not Price Our Aim

Canadian Manufacturers SHOULD USE Canadian Belting

Winnipeg Agents:
BISSETT & WEBB, Limited
151 Notre Dame Ave. East
Winnipeg, Man.

Vancouver Agents:
FLECK BROS., Limited
1141 Homer St.
Vancouver, B.C.

Hamilton.

Tenders are being received in connection with the erection of a $25,000 brick addition to the factory of the Canadian Shovel Company, Imperial Street.

Work has been started on the new addition to the Chipman-Holton Knitting Company's east-end plant. Estimated cost is $50,000.

Plans are being prepared for the new factory to be occupied by the Carbon and Alloy Steels, Limited. This building will cost in the neighborhood of $100,000.

The International Harvester Company plans the erection of a dock and warehouse to cost $40,000.

The Furnivall-New Company, Gage and Cumberland Sts., plan erection of a factory addition estimated to cost $5,000.

Working drawings are being prepared and tenders will be received shortly for the erection of a $200,000 office building for the Canadian Westinghouse Company.

The National Abrasive Company, of Boston and Amesbury, Mass., manufacturers of carbolon, an abrasive material for grinding and polishing purposes, have decided to locate in Hamilton and have bought an acre and a half of land on Biggar Avenue, near Lottridge Street. They will erect a factory immediately and expect to start operations in July. At the start they will employ about 75 men. Nathan C. Harrison, treasurer of the Harrison Supply Company, through which concern they market their products in the United States, is also president of the National Abrasive Company, and he has connected with him, J. T. Johnston, who is looking after the erecting and equipping of the Hamilton factory.

Listowel.

Tenders will be called about May 1 by the manager, Max Becker, for the erection of a $25,000 one-storey reinforced concrete spinning mill for the Perfect Knit Mill Company.

London.

Penmans, Limited, Paris, plan a branch factory here.

Contracts have been awarded in connection with the erection of a $75,000 six-storey reinforced concrete flour mill for Hunt Brothers, Limited.

ESTABLISHED 1875

The Boiler Inspection and Insurance Co. of Canada

Continental Life Building, Toronto

Issues Policies of Insurance after A CAREFUL INSPECTION OF THE BOILERS Covering LOSS OR DAMAGE TO PROPERTY and LOSS RESULTING FROM LOSS OF LIFE AND PERSONAL INJURIES. :: :: :: ::

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APPLEY BRIDGE, Nr. WIGAN, ENG.

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PROTECTO
The Standard Scale Remover and Metal Protector

PROTECTO COAT
Elastic Cement for Exterior Brickwork

J. M. ALLEN, 65 Bloor St. West
Toronto, Ontario
Ontario Representative



PLIBRICO
One-Piece Boiler Lining

PLIBRICO BOND
High Temperature Cement

Remember us when you want anything in Vulcanized Fibre and Paper

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Follow the Gold Seekers' Trail



to this wonderful land of the north. Know the lure of its fjords, snow-capped mountains, blue-green glaciers, rivers and tumbling cascades, Indian villages and totem poles. Thrill with its awakening to a mighty commercial life.

Travel luxuriously by the splendidly appointed

Canadian Pacific "Princess" Liners

including the

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Sailing northward, 1,000 miles along the protected "inside passage."

Make your reservations early and secure choice accommodation.

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Canadian Pacific Railway



Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Wells and Gray, Bank of Commerce Building, Windsor, have been awarded the general contract for the erection of a $150,000 addition to the factory of the Ford Motor Company of Canada, Limited, head office, Ford City, Ont. The firm plan to instal large coke ovens and complete plant for enameling auto bodies.

Plans are being prepared for a $25,000 warehouse for Hobbs Manufacturing Company.

The McClary Manufacturing Company proposes to erect a three-storey brick factory addition to cost $40,000.

Mitchell.

A. Burritt & Company are considering building a new factory, and have asked the town council for a fixed assessment. The building would be 120 feet by 50 feet, two stories in height, with basement, and would cost in the neighborhood of $15,000 to $20,000.

North Bay.

A by-law will be submitted to the ratepayers guaranteeing $15,000 bonds of J. P. Quinlan Company, manufacturers of furniture, school and church fittings.

Owen Sound.

It is understood that the plant of the Union Cement Company may be doubled in capacity this year. The present capitalization of the company, $200,000, is to be increased to $1,000,000, the additional amount being supplied by investment of Chicago capitalists.

Peterborough.

The Quaker Oats Company, head office, Railway Exchange Building, Chicago, plan to rebuild their plant, which was recently destroyed by fire, depending upon certain concessions by the city.

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Auckland, Wellington, Lyttelton and Dunedin (New Zealand) and Melbourne and Sydney (Australia). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

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A trial shipment will demonstrate the facilities we possess for giving COMPLETE SATISFACTION.

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LIVERPOOL SOUTHAMPTON
GLASGOW PARIS
NEW YORK
MONTREAL TORONTO

132 MILLIONS

During 1916 there were handled over the lines of the Canadian Northern Railway System one hundred and thirty-two million bushels of grain.

This fact is remarkable—for two important reasons. The first of these is that the bulk of it was wheat destined to feed the Allies across the Atlantic; the second, to quote from the "Manchester (England) Guardian," that it was "gathered mainly from country opened up by the railway, and tilled for the first time within the last fifteen years."

Twenty years ago the men who were directing the outflow of British gold diverted but little to Canada. Then arose the necessity that plans be prepared to provide for the feeding of the people of the British Isles in the event of the Motherland becoming involved with European powers of the first class. Canada was closest of all Britain overseas. Wheat lands stretched as far as eye could reach. The few people then in the West were clamoring for more people to till the soil, and for colonizing railways to make that tilling possible.

Financiers in London turned the key, the gold of Britain was set to work in Canada, and the Canadian Northern Railway was commenced; British gold continued steadfast until the transcontinental system was practically completed.

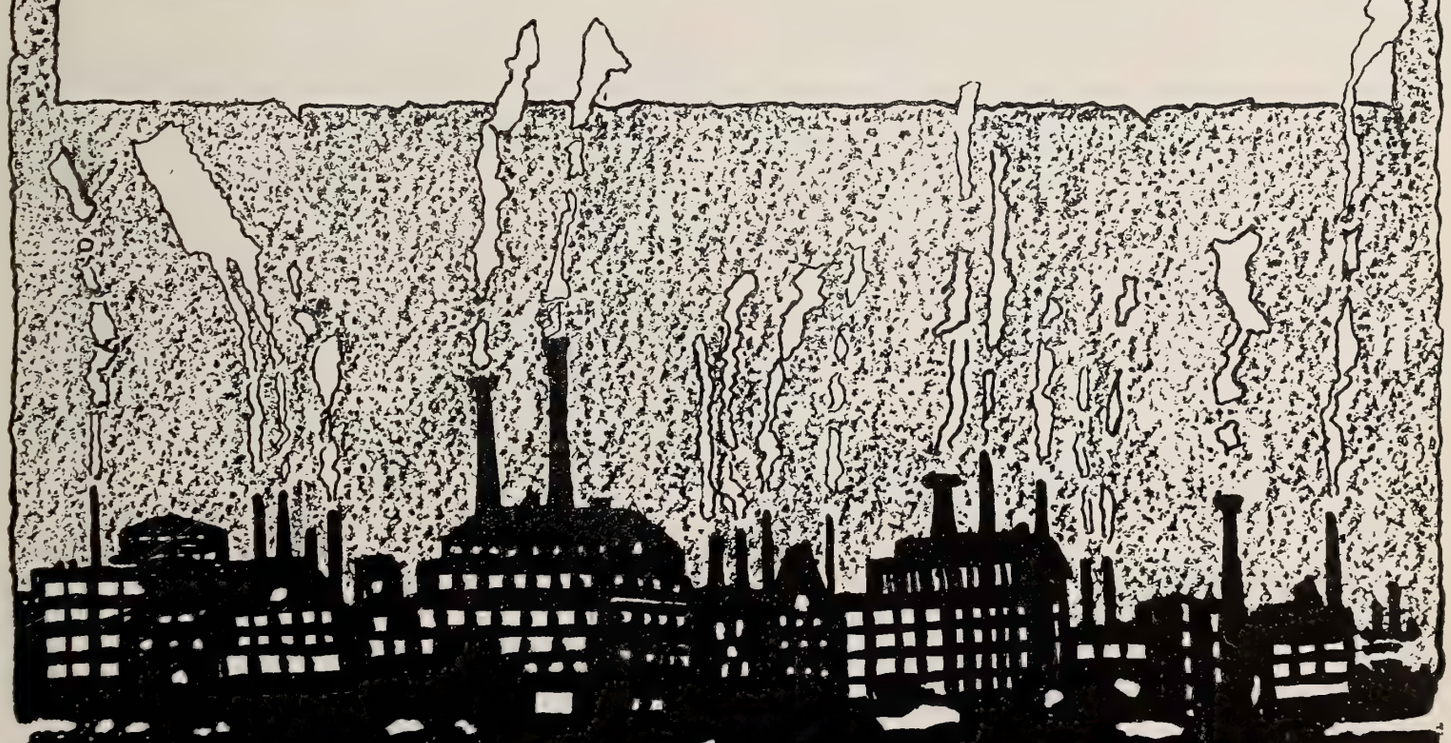
Gold from Britain, the robust faith of Canadians in the destiny of Canada, and the constructive genius of its founders, compounded, made possible the Canadian Northern Railway System—made possible that bountiful supply of wheat for overseas, and made possible the purchasing of vast supplies of goods produced in industrial plants in Eastern Canada, and other parts of the world.

The market "created" by the Canadian Northern is a great market—one that will stand investigation. And such investigation will probably result in more business for the manufacturers of goods western Canadians use. The Canadian Northern seeks to give a complete service to this market.

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Principal Agencies; Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



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ESTY FIRE SPRINKLERS

and show you how to reduce insurance costs 50% to 80%.

IT'S A GREAT BIG MONEY SAVER

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H. G. VOGEL CO. (CANADA) LIMITED

169 Duke St. - MONTREAL, P.Q.

Port Arthur.

Contract has been awarded for the erection of buildings for the Port Arthur Pulp and Paper Company's plant. The estimated cost is $350,000.

Port Hope.

The Nicholson File Co. will make an addition, 130 feet by 30 feet, to its plant here. The company has found its present plant quite inadequate to meet the abnormal demand for its product, which is used extensively in the manufacture of munitions. The present monthly payroll of $11,000 will be increased by $3,000 or $4,000.

St. Thomas.

The Neal London Bread Company have purchased building and plan to expend $25,000 on additions and machinery.

Temiskaming.

The scheme whereby the Riordon Pulp and Paper Company is to build a town of 4,000 people, with houses, pavements, sewers, waterworks, etc., is said to be somewhat delayed owing to a hitch in negotiations between the company and Mr. Lumsden, whose mills were to be taken over and enlarged. Thos. Adams, Ottawa, is consulting engineer on the town-planning, the whole work being under the direction of A. Ferguson, consulting engineer, New York City.

Toronto.

Reliance Knitting Company, 665 King St. West, plan a factory building.

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Don't delay. Write us for particulars.

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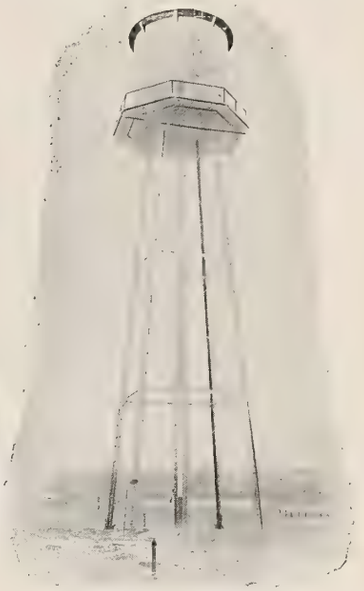
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Canadian
CHICAGO BRIDGE & IRON COMPANY
Limited
Bridgeburg, Ontario

ELEVATED STEEL TANKS AND STANDPIPES

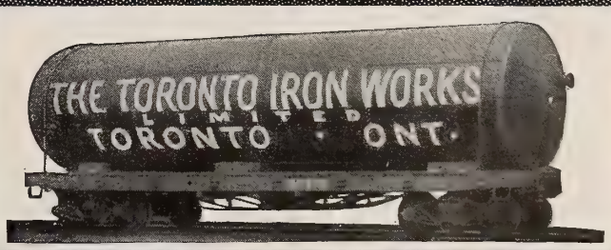
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Nothing equal to BUTTERFIELD TAPS for Shell Work

Butterfield & Co. Inc.
Rock Island, Que.

The Canadian Auto Sales Company have selected a site on which they plan to build a brick and concrete auto factory.

General contract has been awarded in connection with the erection of a $20,000, two-storey, brick factory for Scythes & Company, 22 Church Street.

Business Systems, Limited, 52 Spadina Avenue, plan to build a $70,000 warehouse, seven stories, mill and brick construction, this year.

J. J. Walsh, 26 Adelaide St. West, will start work shortly on the erection of a factory and warehouse, mill and brick construction, to cost $50,000.

Tenders are now being received for the erection of a $47,000 factory and art gallery on Granville Street for B. M. and T. Jenkins, 28 North Street.

The erection of a factory building on Cornwall Street is contemplated by H. B. Johnston & Company, leather manufacturers, 137 River Street.

Windsor.

Plans are being prepared for two new industrial buildings —a service building for the Studebaker Corporation, and an addition to the plant of the Canadian Lamp & Stamping Company. The former will be a three-storey structure, of brick, steel and concrete, 50 by 80 feet, costing some $30,000. The latter will be a one-storey building, 60 feet by 210 feet of brick and steel construction, which will be erected at a cost of about $25,000.

Wingham.

W. H. Gurney, Kent Block, has purchased Kent Block and will shortly convert buildings into a glove factory.

Woodstock.

The Standard Tube and Fence Company, Drew Street, plan to erect an addition to their factory.

Wyoming.

The Fibrois Garment Company, Port Huron, Mich., may erect a factory here for manufacturing sanitary specialties.

QUEBEC.

Maisonneuve.

The American Can Company, 120 Broadway, New York City, contemplates the erection of a can factory, and tenders will likely be called this month.

Montreal.

General contract has been awarded for the erection of a $100,000 extension to the factory of the Imperial Tobacco Co., Limited, 900 St. Antoine Street.

The Montreal Box Board Company, Basin Street, have awarded contract for alteration to their factory to cost $20,000.

Canadian Vickers, Limited, have taken out a permit to erect a dry-dock at a cost of $87,400.

Fire destroyed the plant of J. R. Walker & Company recently. Estimated loss is $25,000.

Quebec.

The Quebec Preserving Company is building a new warehouse on DeVarenues Street, which will cost in the neighborhood of $7,000.

DOON TWINES

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HEAD OFFICE: KITCHENER, ONT.

Makers of all grades of Jute, Flax, Hemp and Cotton Twines.

Plough Lines, Clothes Lines, Ropes (bleached and unbleached).

Sewing and Warehouse Twines, finished and unfinished.

Flax Stitching, Mattress and Tufting Twines

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ST. HYACINTHE AND COATICOOK, QUEBEC

Penmans LIMITED

PARIS : : : CANADA

Valleyfield.

*The Montreal Cotton Co. have recently been making extensive additions to their equipment. They purchased last month one hundred 40-inch looms for the weaving of lawns and fancies and, as a new departure, seventy-eight 72-inch looms for the weaving of table linens and table napkins, making 178 looms in all.

SASKATCHEWAN.

Moose Jaw.

Robin Hood Mills Company are making an extension to their plant to cost in the neighborhood of $100,000.

Saskatoon.

The Quaker Oats Company will erect a two-storey factory and warehouse, 165 feet by 50 feet.

The University of British Columbia, situated at Vancouver, is about to establish a department of "advanced commercial science." It is to cover four years and include a degree. The subjects taught will include modern languages useful in business (Russian and Spanish are mentioned), economics, statistics, markets, financial management, foreign exchange, insurance, banking problems, etc.

JULIUS COHEN & JOSEPHY

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economiq Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited. Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement see Index, Page 1

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"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

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HIRAM WALKER & SONS
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Walkerville, Canada

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MEXICO CITY VICTORIA, B.C. WINNIPEG

BRASS GOODS
*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford. Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton. Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Joliette Steel Co., Ltd., Montreal.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited, Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke. Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.
CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.
CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.
CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.
CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,
COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
CORKS
S. H. Ewing & Sons, Montreal, Que.
CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.
CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.
CORSETS
Dominion Corset Co., Quebec, Que.
COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.
COTTONADES
Hamilton Cotton Co., Hamilton, Ont.
COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.
COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
CRANES
*Northern Crane Works, Walkerville, Ont.
CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.
CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.
CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.
CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.
CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que
CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
CUPS, presentation
Standard Silver Co., Toronto.
CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.
CURLED HAIR
*Delany and Pettit, Ltd., Toronto.
CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.
CUTLERY
Standard Silver Co., Toronto.
CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.
DENIMS
Hamilton Cotton Co., Hamilton, Ont.
DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
DESIGNERS
Ontario Engraving Co., Hamilton, Ont.
DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.
DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.
DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
DISINFECTING APPARATUS
Spramotor Co., London, Ont.
DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.
DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.
DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.
DRESSING, belt.
Sadler & Haworth, Montreal, Que.
DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.
DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.
DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.
DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.
DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.
DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.
DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.
DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.
DYNAMITE
Canadian Explosives, Limited, Montreal, Que.
DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.
EIDERDOWN
Galt Knitting Co., Ltd., Galt.
ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.
ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.
ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.
ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.
ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.
ELECTROTYPING
Central Press Agency, Toronto.
ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.
ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.
ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.
ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.
ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.
ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.
ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.
ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.
ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton Ont.
Rolph & Clark, Limited, Toronto
Stone, Limited, Toronto.
ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co, Hamilton, Ont.
ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.
ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.
ENGRAVING
*J L. Jones Engraving Company, Toronto.
ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.
ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.
EXCELSIOR
*Delany & Pettit, Ltd., Toronto.
EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.
EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.
FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.
FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.
FANS
*Sheldons, Limited, Galt, Ont.
FASTENERS, belt
*Sadler & Haworth, Montreal, Que.
FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited Montreal.
FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.
FENCING AND GATES, woven wire
Banwell-Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.
FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.
FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.
FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.
FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.
FILING CABINETS
*Office Specialty Co., Newmarket, Ont.
FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.
FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.
FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.
FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.
FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
*Hamilton Gear & Machine, Toronto.

GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.

INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

*For Display Advertisement see Index, Page 1

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.

LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS
*Maples, Limited, Toronto.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.

METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

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OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.

PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES AND CATSUPS
T. A, Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

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PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHEETS, galvanized
*Dominion Sheet Metal Co., Ltd., Hamilton.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*Metallic Roofing Co., Limited, Toronto.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Guelph, Ont.
SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.
SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.
SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.
SPRAYERS
Spramotor Co., London, Ont.
SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.
SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.
STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.
STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.
STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.
STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STAMP MILLS
*Jenckes Machine Co., Sherbrooke.
STATIONERY, office
Harris Lithographing Co., Toronto.
STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.
STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.
STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.
STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited. Hamilton.
STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.
*Joliette Steel Co., Ltd., Montreal.
STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.
STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.
STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL SHELVING
*Dennis Wire & Iron Works Co., London.
STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.
STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STEREOTYPING
Central Press Agency, Toronto
STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.
STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.
STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.
STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.
STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.
STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.
STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.
SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.
SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.
TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.
TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.
TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.
TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,
TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.
TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.
TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.
TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.
TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.
TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.
TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.
TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.
TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.
TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.
TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.
TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.
TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.
TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.
TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.
TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.
TUBING, Fibre
*Beveridge Paper Co., Limited. Montreal.
TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.
TUMBLERS, foundry
*Northern Crane Works, Limited. Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
TURPENTINE
*Brown Corporation, La Tuque, Que.
TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TWEEDS
Rosamond Woollen Co., Almonte, Ont.
TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.
TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.
TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont
UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.
UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.
UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.
VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.
VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal, Que.
VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt
VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.
VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.
VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
WAGONS
TudhopeAnderson Co., Ltd., Orillia. Ont.
WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.
WASHERS
*The Steel Company of Canada, Limited. Hamilton.
WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.
WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London. Ont.
WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.
WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto.
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

*For Display Advertisement see Index, Page 1

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.
WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que
Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.
WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.
WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.
WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.
WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont
WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WINDOW SHADES
Daly & Morin, Montreal, Que.
WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.
WIRE CLOTH
*Canada Wire & Iron Goods Co. Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.
WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.
WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.
WOOD
Standard Fuel Co., Toronto.
WOOD PRINTERS
Barchard & Co., Ltd., Toronto.
WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.
WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
WOOL
*H. V. Andrews, Toronto.
WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.
WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada. Ltd., Niagara Falls, Ont.
WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.
WROUGHT IRON PIPE
*The Steel Compony of Canada. Ltd., Hamilton.
WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.
YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.
ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement see Index, Page 1

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Canada

WINNIPEG CONVENTION C.M.A., JUNE 12-14

Vol. XVIII., No. 2 JUNE, 1917 $2.00 per Year

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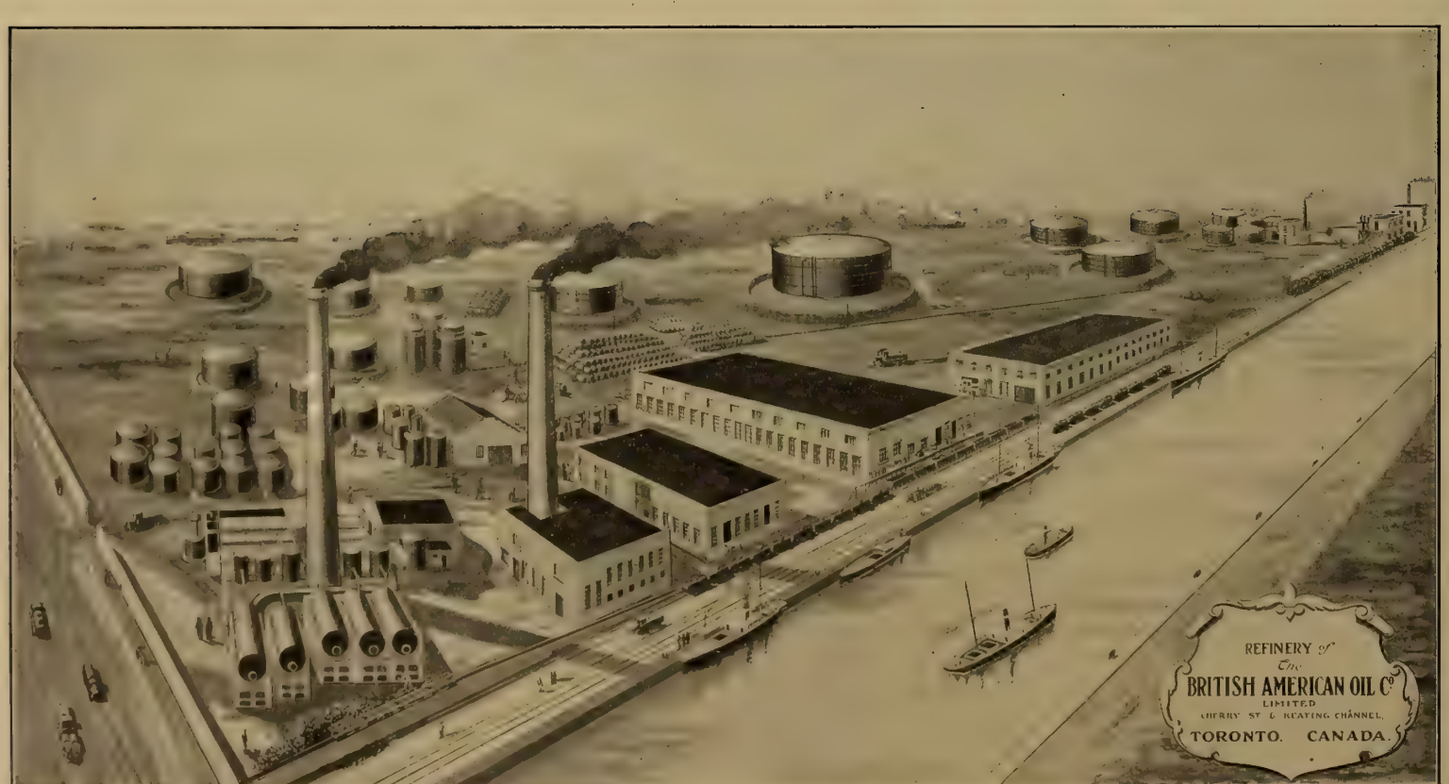
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to connect the pipes throughout your plant.

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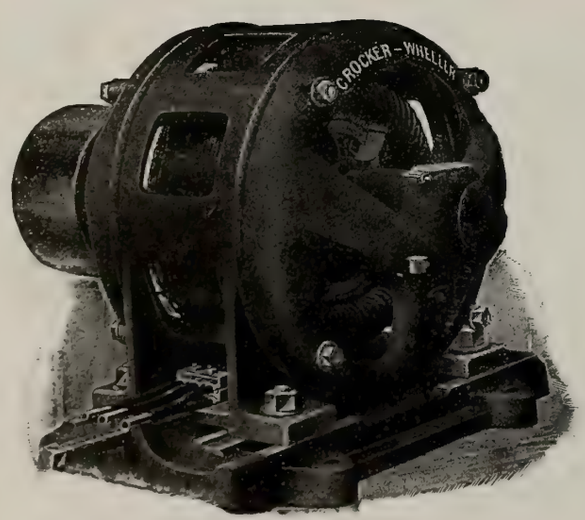
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INCLUDES:

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Excellent Efficiency

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Bulletin 155 describes them.

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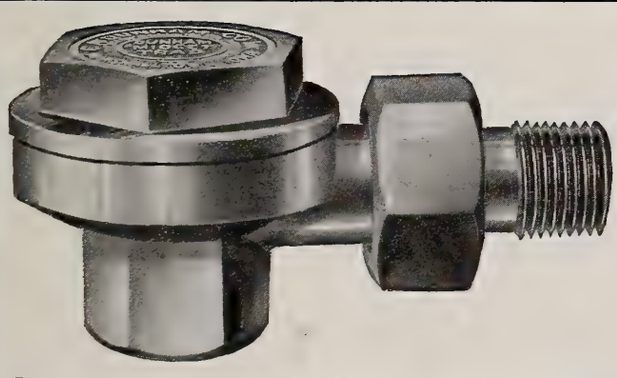
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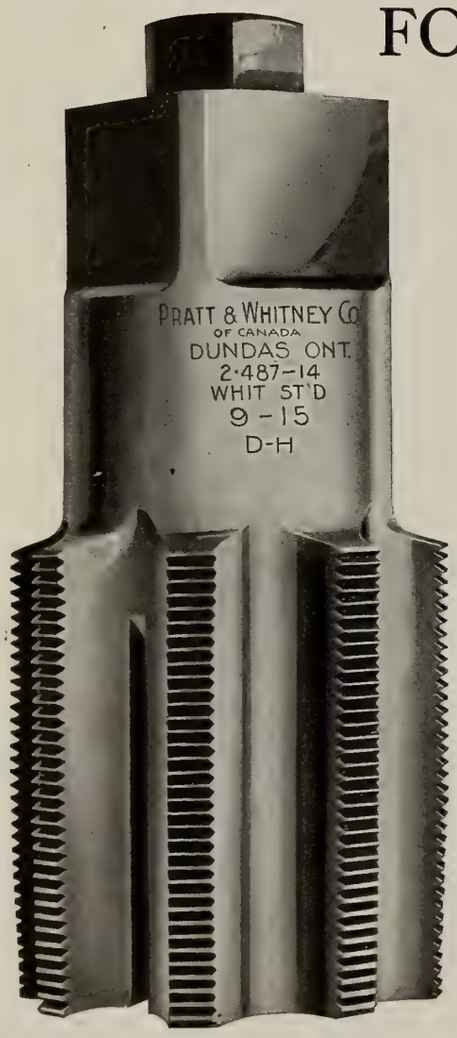
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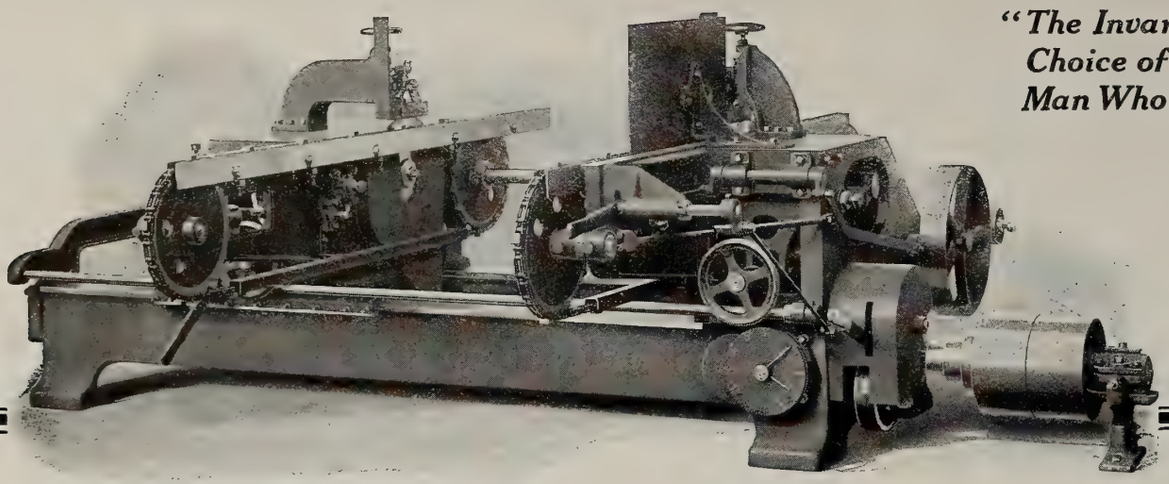
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Constitutes the chief duty of the operator when equalizing stock on a Yates No. 229 Automatic Double Cut-off Saw.

Once adjusted to cut the proper length, stock is piled into the hopper in armful lots, the feed is started and the operator "lets her go."

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(Hopper Feed)

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Yates

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AND

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This Trade-Mark represents the highest grade of valves made; the production of one of the most modern valve plants in the world.

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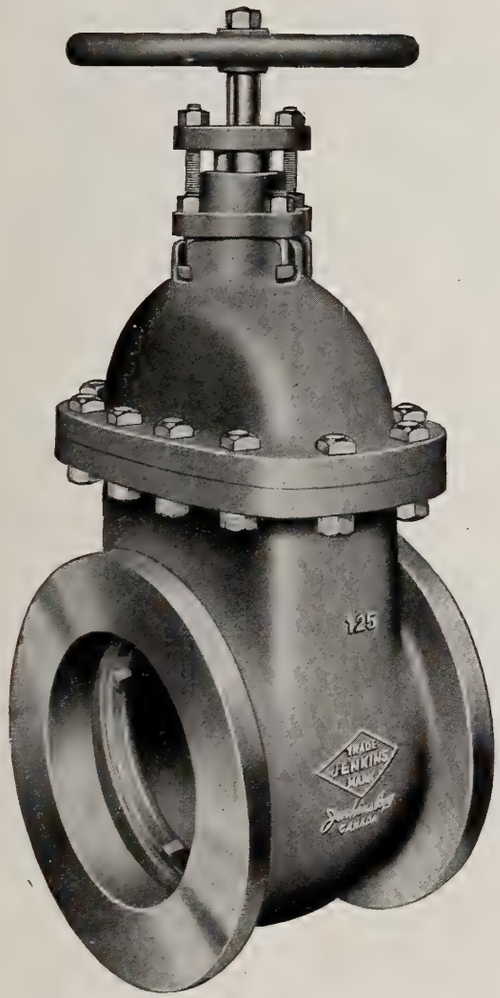


FIG. 402, TYPE "K," IRON BODY INSIDE SCREW, GATE VALVE, FLANGED

Type "K" Iron Body Gate Valves are registered for use in Ontario and the Western Provinces by the Depts. of Public Works.

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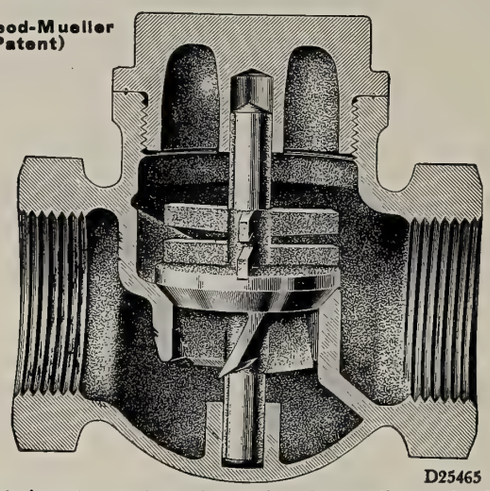
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NON-FOULING

Turbine Check Valves

(McLeod-Mueller Patent)



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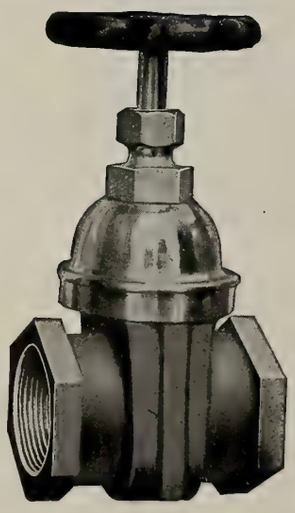
Steam, water, oil, or similar liquids of common density are, by constant agitation from action of turbine wings, prevented from fouling the seat and rendering the check ineffective.

Sample on approval. Make **your** request **now.**

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HERE IS A

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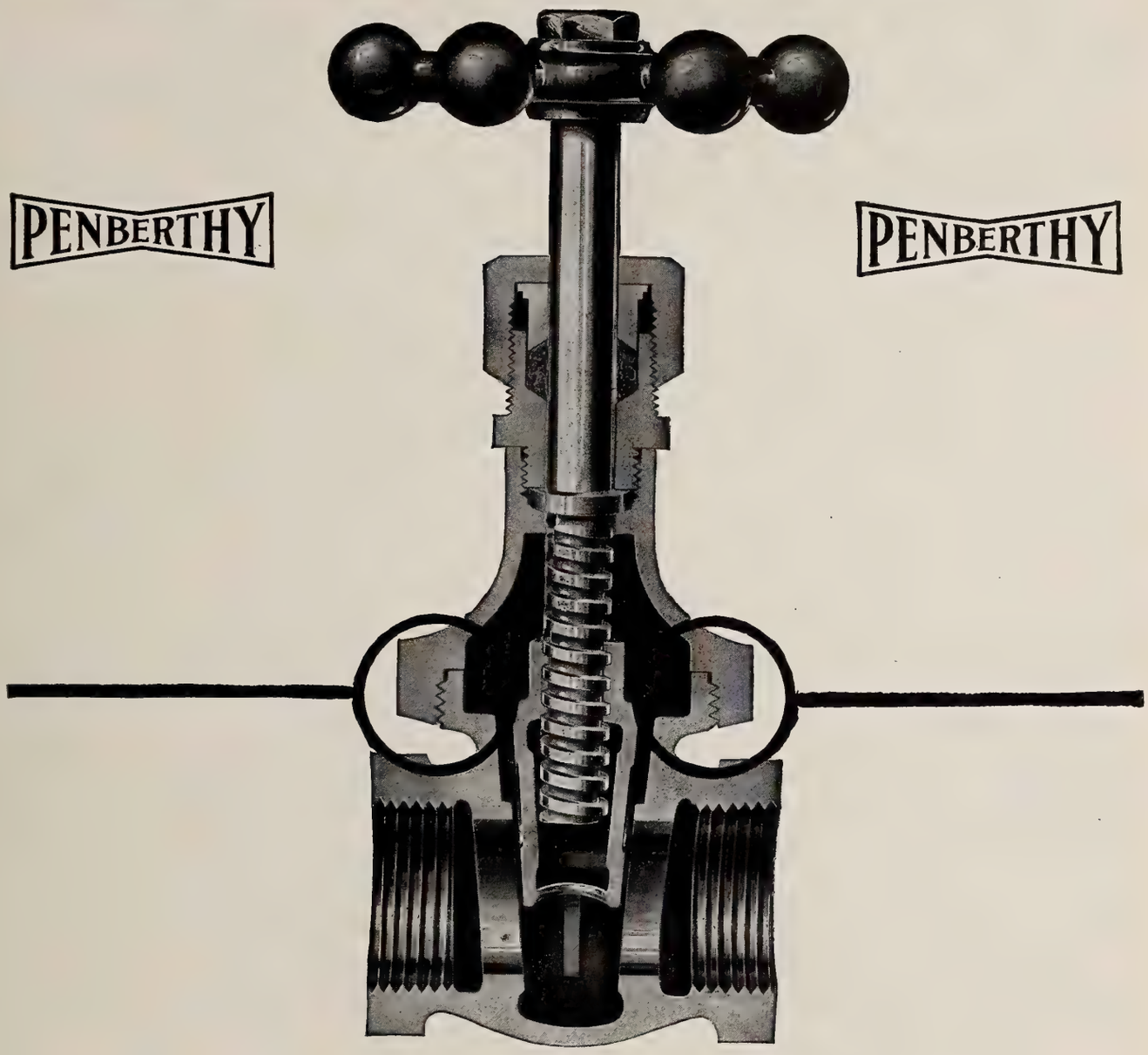
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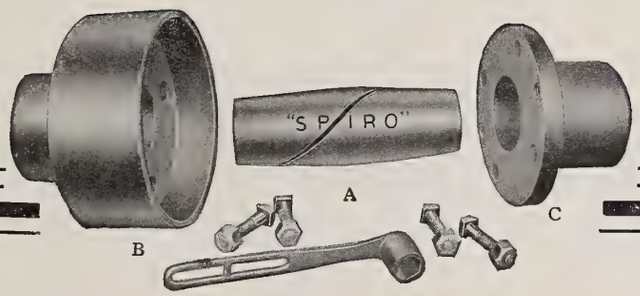
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The "Spiro" Compression Coupling has 50% more gripping power than any other compression coupling on the market. This is no idle boast, but is testified to by the users of the "Spiro."

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Steel Plate Work

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Wire Cloth

of every description



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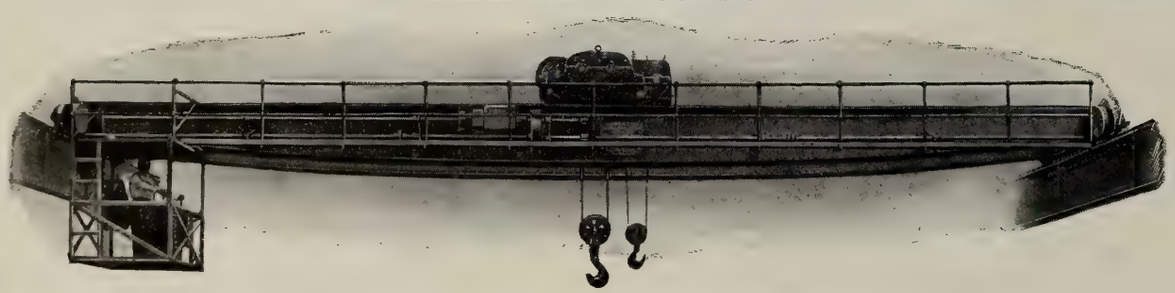
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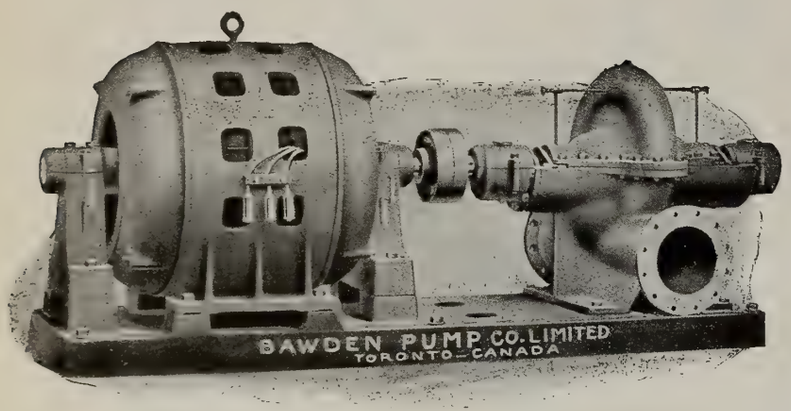
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DODGE

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Limited
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Canadian Made Pumps With a Reputation Equal to any Pump in the World

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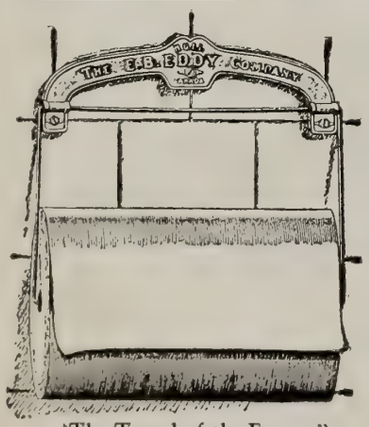
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"The Towel of the Future."

The Individual Towel is an institution which has come to stay, we trust. Certainly in the twentieth century no thinking man will share a towel with all and sundry, or compel his employees to run the risk of germ infection when, at the same cost, or perhaps for less, he can provide a clean towel for himself and for every person in his employ.

The E. B. Eddy Company's tissue paper towels are to be particularly recommended, being made under the most perfect sanitary conditions. Each towel is about the size of a large serviette, absorbent, and soft to the touch. Put up in rolls containing 150, 250, and 500 towels, well perforated, so that each towel is readily detachable.

Guard Your Health in this particular and instal a roll of these towels in your Office, Factory or Warehouse. They are sold with neat, attractive fixture complete, all ready to affix to the wall. See illustration.

DUNLOP



PACKING

PICTURE THIS PACKING IN YOUR PLACE

Dunlop Packing has no claim on any company's enthusiasm except by reason of its ability to do the work assigned to it, and to be there in the "pinches."

Ever-Increasing Demand

Every day Engineers and Mechanical Superintendents are realizing that the remarkable increase in the demand for Dunlop Packing is accountable for in only one way—by consistent service, persistently kept up.

Dunlop **"Sunset"** Sheet Packing (red) has that desirable flexibility which ensures the necessary "life" in a packing. Its remarkable tenacity holds in the hottest joints.

"LongLife" and "Globe" Spiral Excel in Service

Dunlop **"Longlife"** and **"Globe"** Spiral Piston Rod Packings take quality precedence over competitive brands, because we make them, like **"Sunset"** Sheet, to a standard—and that standard was created by critical buyers like yourself. Wherever these packings are used, Engineers are complimented on the continued efficiency of their plants. No blow-outs, no frequent adjusting, no loss of power due to friction—when Dunlop **"Longlife"** and **"Globe"** Spiral Packings are used.

We, also, make Valves and Diaphragms of excellent quality.

PROOF OF SERVICE IN COUNTLESS CANADIAN PLANTS

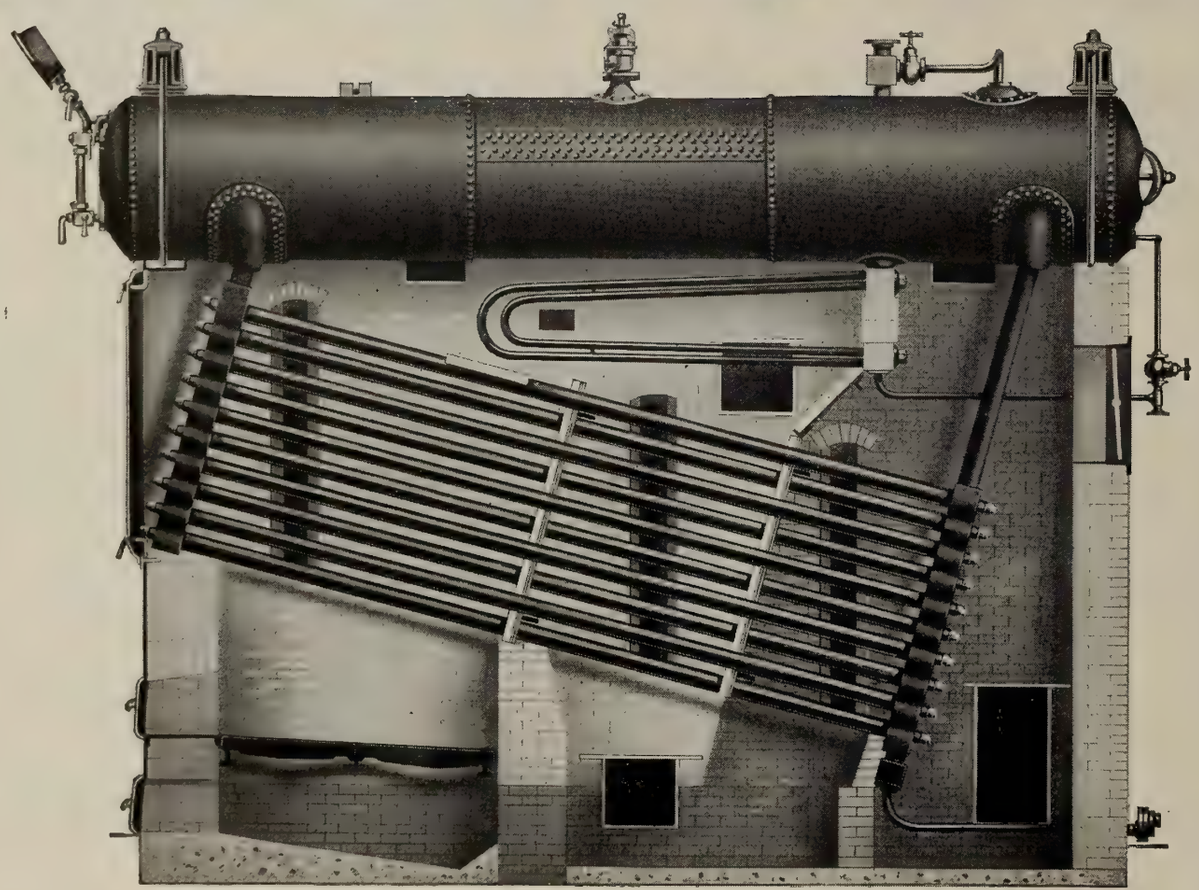
Dunlop Tire & Rubber Goods Co. Limited

Head Office and Factories: Toronto

Q. 18

G. & McC. Co.

BOILERS



Sectional View, St'd Type "B" Sectional Water Tube Boiler with Superheater attached.

G. & McC. Water Tube Boilers are fitted with large Steam and Water Drums, connecting nipples of increased size and straight 4" Tubes, all of which tend to insure **POSITIVE AND RAPID CIRCULATION AND INCREASED STEAMING CAPACITY.**

All parts subjected to steam pressure are made of FORGED STEEL.

G. & McC. Engines and Boilers are giving satisfaction in thousands of
CANADA'S LEADING INDUSTRIAL INSTITUTIONS

We will supply Catalogues, Plans, Specifications, Prices, etc., upon request.

THE GOLDIE & McCULLOCH CO., Limited

Head Office and Works: GALT, ONTARIO, CANADA

TORONTO OFFICES: Suite 1101-2, Traders Bank Bldg.

WESTERN BRANCH: 248 McDermott Ave. Winnipeg, Man.

QUEBEC AGENTS: Ross & Greig, 412 St. James St., Montreal, Que.

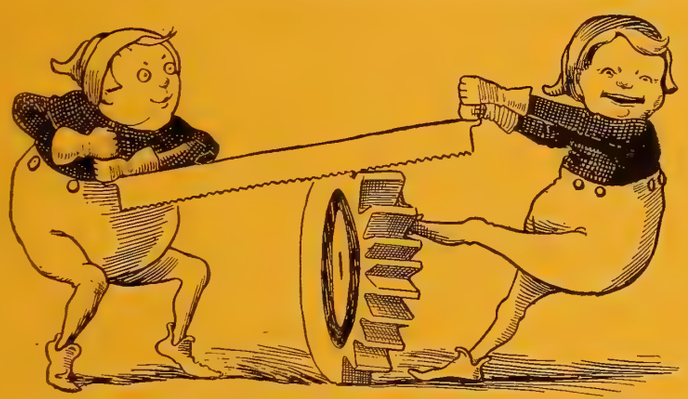
BRITISH COLUMBIA AGENTS: Robt. Hamilton & Co., Vancouver, B.C.

WINNIPEG
The CONVENTION CITY

SMP "QUALITY"

We extend a cordial invitation to any and all Delegates to the Convention, which meets in Winnipeg, June 12th, 13th and 14th next, to visit us and make our Office their Headquarters while in our City.

The Sheet Metal Products Co. of Canada Limited
111 Lombard Street
Winnipeg, Man.



WE CUT GEARS
Rawhide, Steel, Brass, Iron

MANUFACTURE
Grinder Heads, Power Hack Saws
Friction Pulleys, Index Heads

DESIGN AND BUILD
SPECIAL MACHINERY

Winnipeg Gear & Engineering Co.
197-199 PRINCESS ST., WINNIPEG

D. ACKLAND & SON
LIMITED

Extend a welcome to the Manufacturers of Canada for the Winnipeg Convention of the Canadian Manufacturers Association. -:- -:-

WINNIPEG - MANITOBA

Canadian Manufacturers

Visiting the Winnipeg Convention
June 12, 13, and 14

Are reminded that the three prairie provinces offer probably the most profitable field in the Dominion in which to conduct an advertising campaign. It is a field which can be covered at a very moderate expense by associating with the Free Press of Winnipeg, the outstanding leader of all the Western Daily Newspapers, a selected list of smaller Western daily papers.

The following responsible Canadian Advertising Agencies are represented in Winnipeg. They are equipped to furnish full particulars concerning the West, to undertake the preparation of a general publicity campaign, supply information regarding newspapers and advertising rates, and they will place their services at your disposal as freely as the service department of the Winnipeg Free Press :

A. McKim, Ltd. **J. J. Gibbons, Ltd.** **McConnell & Fergusson Agency** **Macpherson-McCurdy, Ltd.**

THE FORT GARRY
WINNIPEG

Headquarters Canadian Manufacturers Association Convention

TARIFF

Single Room with Running Water	.....	$2.00	per day and upward
Double " " " "	.....	$3.00	" " "
Single " " Private Bath	.....	$3.00	" " "
Double " " " "	.....	$4.00	" " "

Restaurant Service from 7.00 a.m. to Midnight.
Descriptive booklet furnished on application, to

W. P. HUTCHISON, Resident Manager

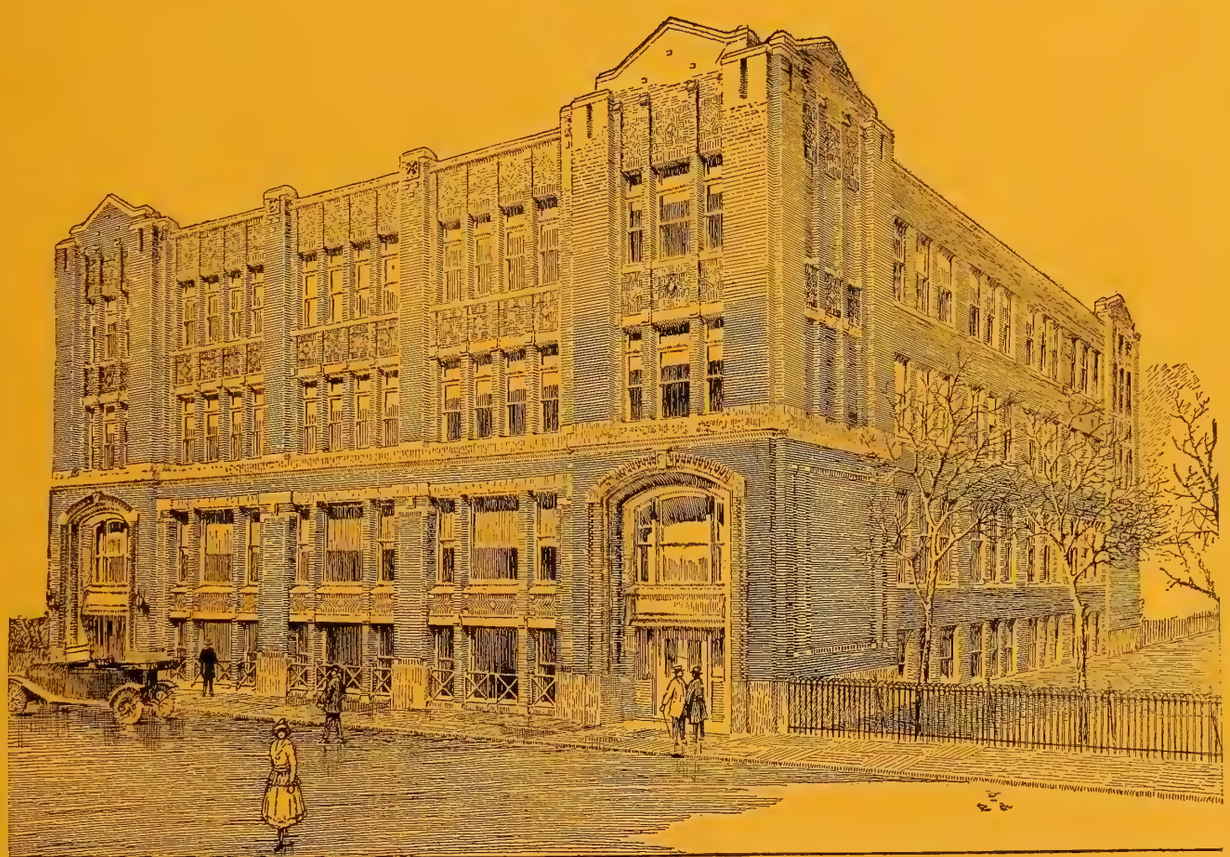
New Home of

THE GRAIN GROWERS' GUIDE

and

PUBLIC PRESS

WINNIPEG



The illustration shows the new printing and publishing plant being erected for the Public Press and the Grain Growers' Guide on Vaughan Street, opposite the Y.M.C.A., Winnipeg. The building is of reinforced concrete and will be fireproof throughout. When completed in September next, the plant and building will represent an investment of $300,000 and will be the second largest printing plant in Western Canada. Complete equipment for handling the largest mail-order, railway-tariff, catalog and publicity work is being installed and employment provided for over one hundred hands.

Public Press Ltd. **Grain Growers' Guide**

WINNIPEG

Manitoba Bridge & Iron Works, Limited

STRUCTURAL STEEL

Railway and Highway Bridges, Structural Steel for Buildings, Theatres, Loft Buildings, Coal Tipples, and Mining Equipment.

PLATE WORK

Plate and Tank Work of all descriptions, Smoke Stacks, Breeching, Gaol Cells, and Ornamental Iron Work.

TRANSMISSION MACHINERY AND SHAFTING FOR GRAIN ELEVATORS

Pulleys, Shafting, Bearings, Gears, Clutches, Sprockets, Chain, etc.

MERCHANT STEEL AND IRON

Bars, Rods, Plates, Sheets, Shapes, Rivets, Bolts, Spikes, Boiler Tubes, etc. A large tonnage always carried in stock of all sizes.

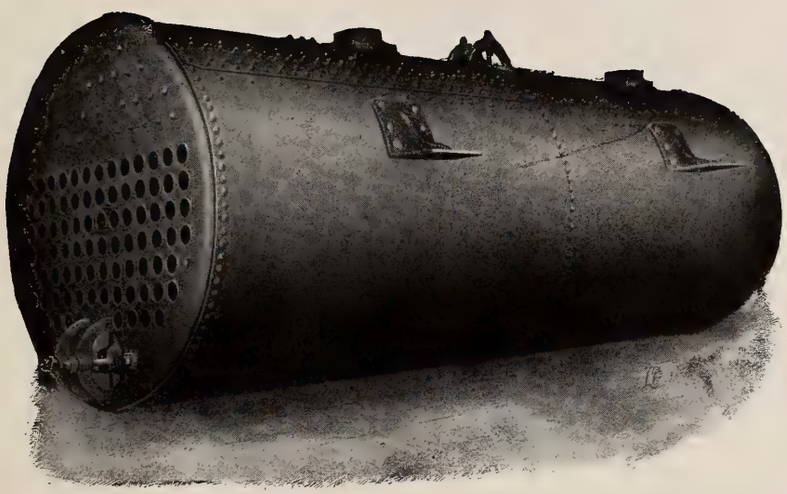
REINFORCING BARS FOR CONCRETE

Shipment from Mill or Stock of all sizes of Medium Steel, Square Cold Twisted up to 60 ft. long, also all sizes of Plain, Round and Square.

We have a monthly stock list that should be on your desk. Ask for it.

Plant and Works, Logan Ave. West, Winnipeg, Man.

BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

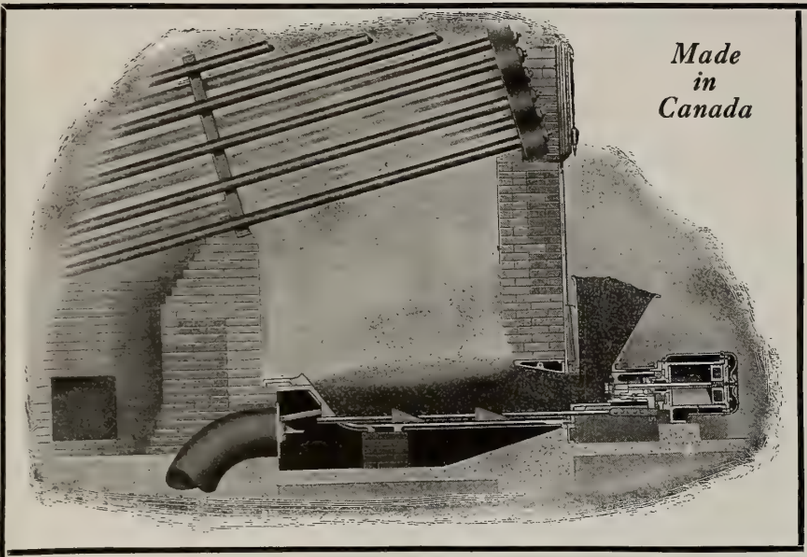
INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

ENGINEERS AND BOILERMAKERS

14 Strachan Avenue Toronto, Canada

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers



Made in Canada

The One Mechanical Stoker of Proved Efficiency

Stokers come and stokers go, but the Jones, having a perfect basic principle of design, maintains its leadership in the field.

There's nothing experimental about the

JONES UNDERFEED STOKER

Its merit is proved beyond all possibility of doubt. Continuous savings in fuel consumption varying from 15% to 25% form a proof of efficiency that every manufacturer can appreciate.

We can refer you to hundreds of steam power plants where these fuel savings are being effected every working day in the year. Don't be skeptical—the ordinary coal scoop in a fireman's hands is a long way from being the "last word" in boiler feeding. Find out about the Jones—you owe it to yourself. Drop us a line asking for full particulars.

JONES UNDERFEED STOKER CO., Limited

37-41 BRITAIN STREET - TORONTO

"We were able to cut out one of our boilers—saving fuel and getting better results"

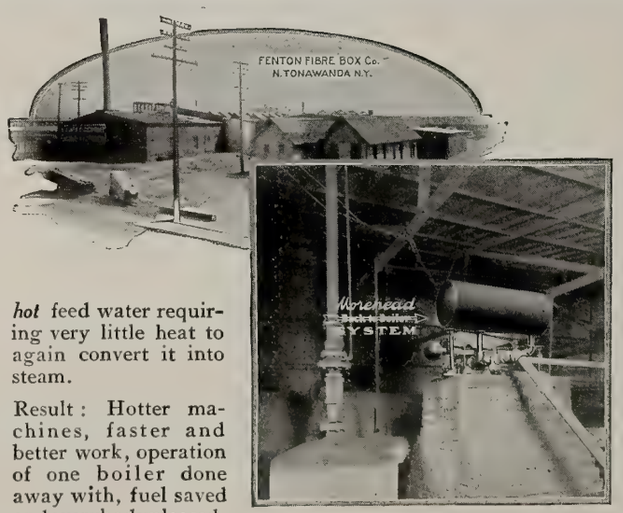
THIS STATEMENT from the Fenton Fibre Box Co., of N. Tonawanda, N.Y., is simply a repetition of similar claims received from several thousand other users of the simple and comparatively inexpensive

Morehead Back to Boiler SYSTEM

of steam line drainage and boiler feeding.

In this plant the returns from the steam heated corrigators, hot plates, etc., were formerly collected in a hot well and pumped back to the boiler by the notoriously wasteful steam pump method.

With the Morehead System installed all water of condensation is returned to the boilers direct and under pressure as pure *hot* feed water requiring very little heat to again convert it into steam.



Result: Hotter machines, faster and better work, operation of one boiler done away with, fuel saved and everybody pleased.

So thoroughly satisfied was this progressive concern with the Morehead System that they immediately installed a duplicate System in the Buffalo Box Factory which they own and control.

You can likewise convert your radiation losses into their equivalent of dollars. Tell us what you are doing and we will tell you—without obligation—what we can do for you.

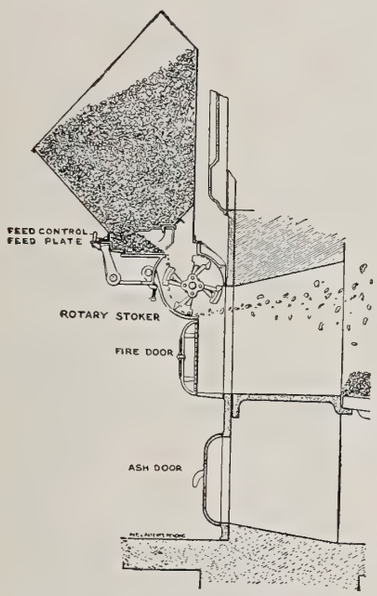
Get the advice of our engineering department with our 25 years' experience in solving steam drainage and boiler feeding problems.

Canadian Morehead Manufacturing Company

DEPT. "K" - WOODSTOCK, ONTARIO

410

REASON WITH US FOR A MOMENT!



The stoker mechanically feeds and uniformly spreads any type of fuel in a light, continuous stream over the entire surface of your present fire grates.

With coal and labor at the present price, can you afford to operate the boiler room —the heart of your plant, under any other than the most economical conditions?

Why buy coal costing from $8 to $10 per ton, when you can get all the steam you want with fuel at about half the price?

Galt Sprinkler Stokers are Inexpensive, Smokeless and Efficient

They will burn low-priced coal, including the screenings from anthracite, bituminous, coke and lignite fuels, and when used in conjunction with our modern Automatic Turbo-Blower will double the capacity of the boilers, should that be necessary.

What We Claim

That we will furnish indisputable facts and figures to any manufacturer or others that we can, by using cheap fuel, effect savings in the cost of producing steam varying from 15% to 30% or over, depending on conditions and the price of coal.

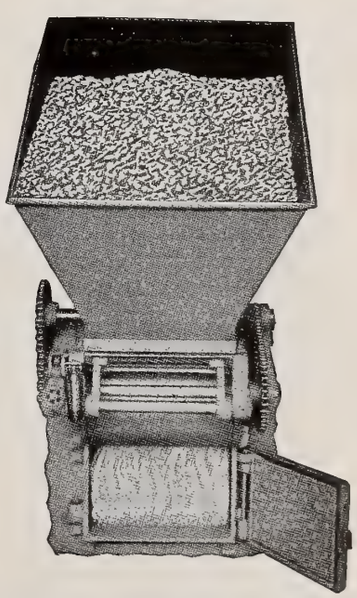
A Large Montreal Plant Saved 50,000 Dollars Last Year

By utilizing low-priced fuel. Could your conditions be improved upon? The service of our combustion engineer is at your command, free of all cost—send for him. It places you under no obligation.

Galt Sprinkler Stokers can be installed ready for use on any type or size of boiler in from 8 to 10 hours and without alteration to your present boiler fronts and furnace settings. This is an important point to be considered regarding stokers.

The British, French and other navies use Sprinkler Stokers—there must be a reason.

Ask for our 40-page illustrated catalogue.



Allows free access to the furnace at all times.

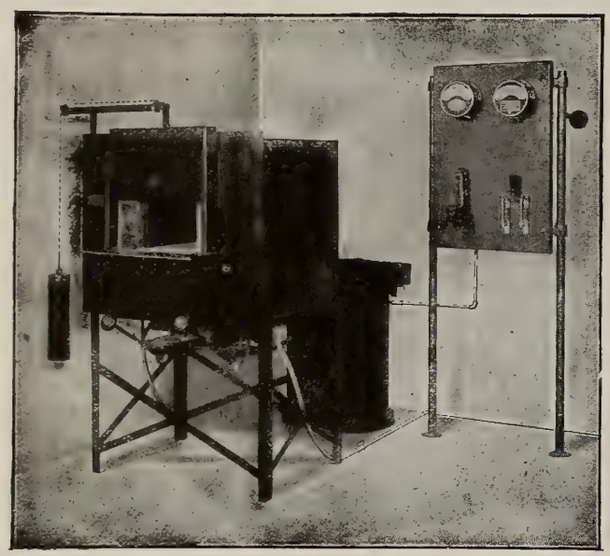
The Galt Foundry Co., Galt, Ontario

ALBERTA
W. J. Yeo & Co., 210 McLeod Block, Edmonton

MONTREAL
Ross & Greig, 412 St. James Street

OTTAWA, ONT.
Campbell Steel and Iron Works, Ltd.

ARE YOUR TOOLS INSURED AGAINST



Overheating–Underheating Uneven Heating–Scaling?

A HOSKINS Electric Furnace and Pyrometer will insure you against such losses.

The HOSKINS Electric Furnace gives a clean, even heat, free from the injurious scale-forming gases. All tools hardened exactly the same; a skilled operator is not necessary.

The HOSKINS Pyrometer is a simple and rugged device which will give at all times the correct furnace temperature.

Many manufacturers increase the life of their tools 20% by using HOSKINS' Furnaces. Probably an equal saving can be made for you.

Write for further information. "MADE IN CANADA"

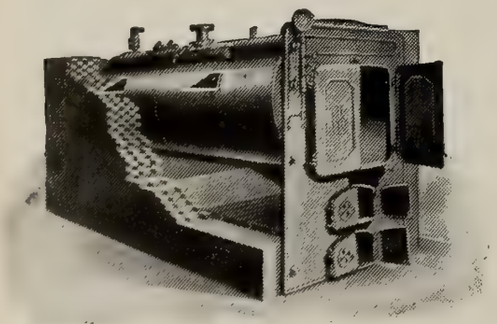
CANADIAN HOSKINS, LIMITED

Electric, Gas and Oil Furnaces and Pyrometers

WALKERVILLE - ONTARIO

E. Leonard & Sons, Limited

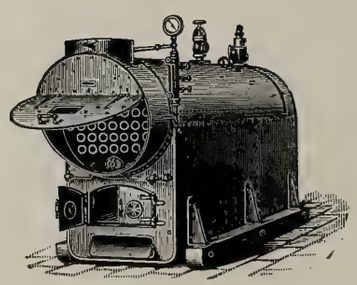
LONDON . . ONTARIO

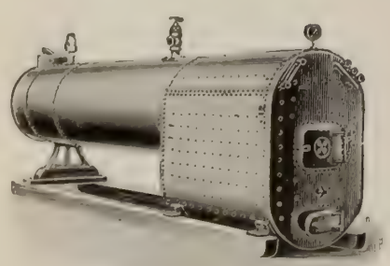


Manufacturers of

BOILERS ENGINES

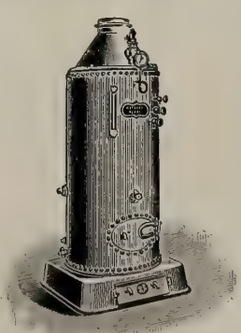
of all types and sizes

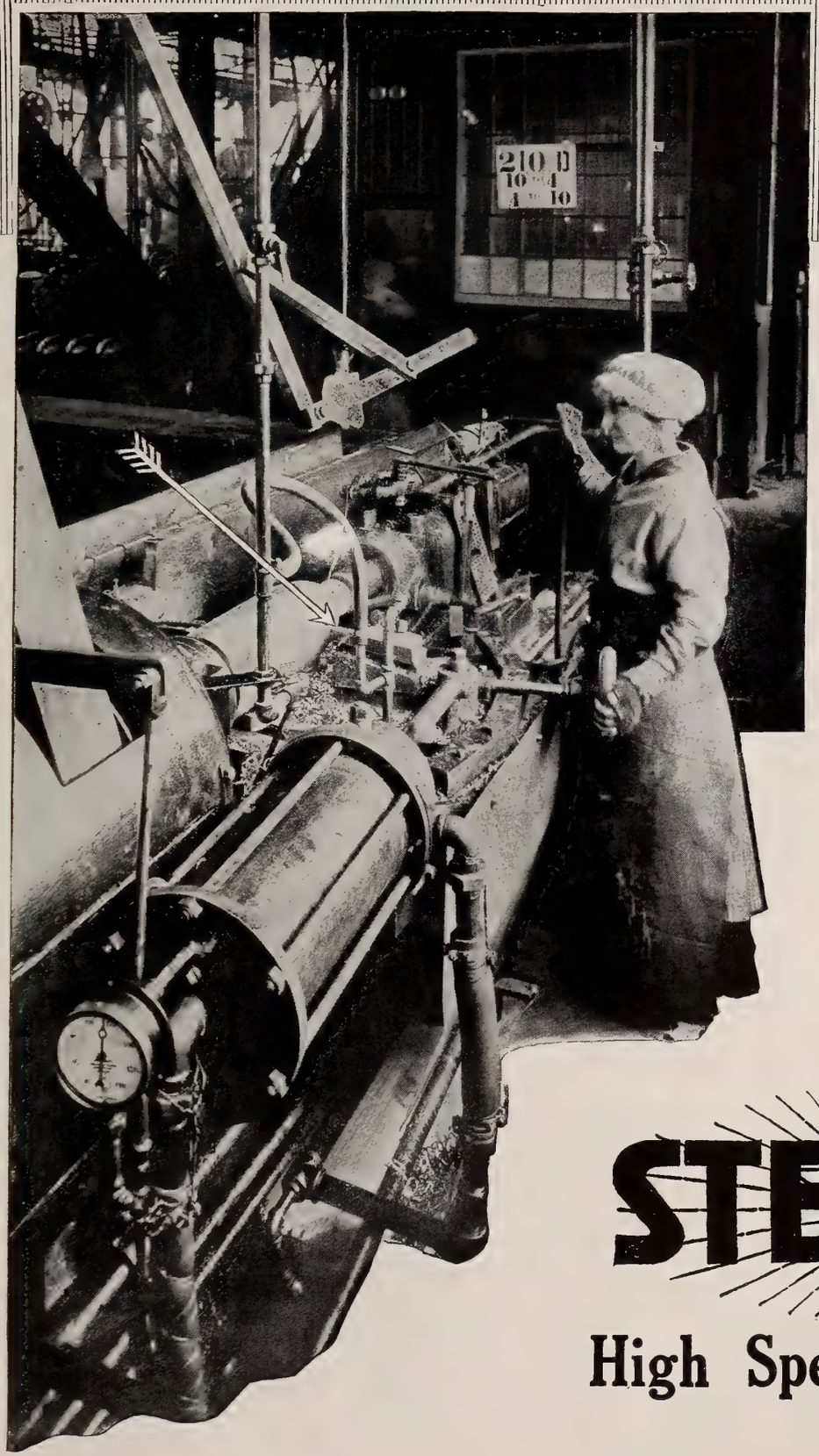




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Vancouver Machinery Depot,
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"Not a Steel, but its Master"

FINISHING the profile of 8-in. Howitzer shells made from rolled steel forgings.

The cut starts at a speed exceeding 200 ft. per min. and machines the surface 9 in. long in 1 min. 24 sec.

The tool is given a feed of ⅛ in. per revolution and imparts a highly finished surface to the work.

An output of 55 shells per grinding is maintained easily.

An instance of extreme conditions which Stellite is meeting successfully every day.

Stellite is harder and tougher than steel. Cuts longer and 25 to 300% faster. Requires no forging, and cuts as well when running at red heat as when cold—does not lose its temper. Convince yourself that STELLITE stands behind bigger production and tool economy by giving it a try-out.

STELLITE

High Speed Tool Metal

Deloro Smelting & Refining Co., Limited, Stellite Sales Dept. DELORO, ONT.

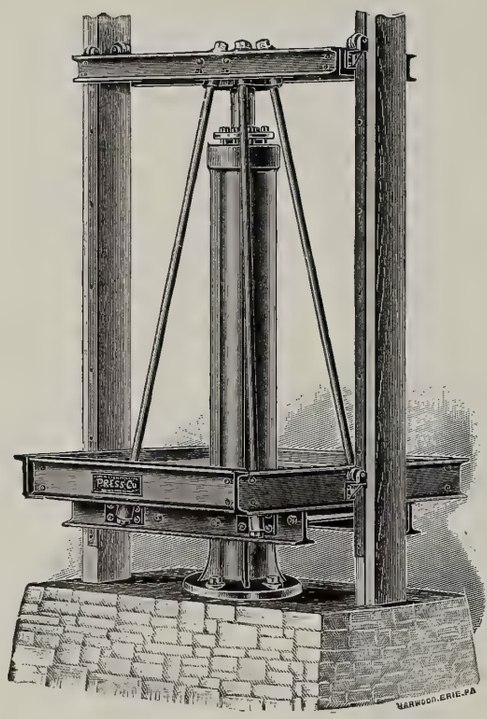
Toronto Branch: 200 King St. W.

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HYDRAULIC PUMPS and ACCUMULATORS

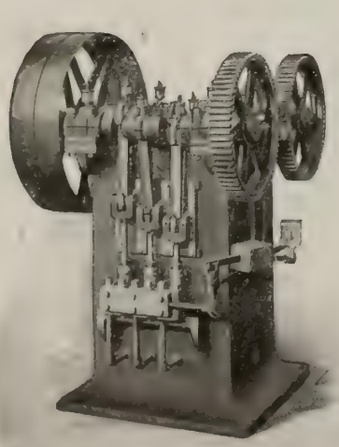
All Sizes and Styles

Accumulators up to 18"x15'

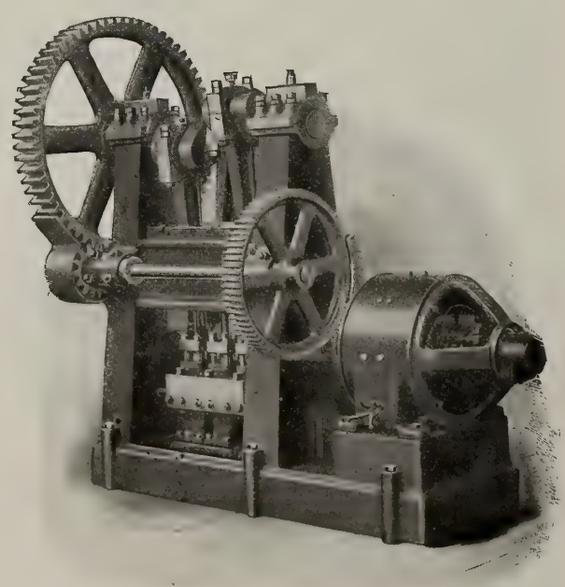


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Pumps up to 100-gallon capacity



Any pressure desired



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For Every Class of Service

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"BEATTY"



Material Handling Plant has back of it 55 years of successful experience.

HOISTING ENGINES
STEEL DERRICKS
DIPPER DREDGES
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DERRICK IRONS
SUCTION DREDGES
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Horizontal and Water Tube Type Stacks, Tanks, Water Flumes.

SPECIAL MACHINERY
Estimates given on all kinds of special Machinery.

REPAIR WORK
Given prompt attention.

Office and Works:
Esplanade St. East, Toronto

INDUSTRIAL LOCOMOTIVES

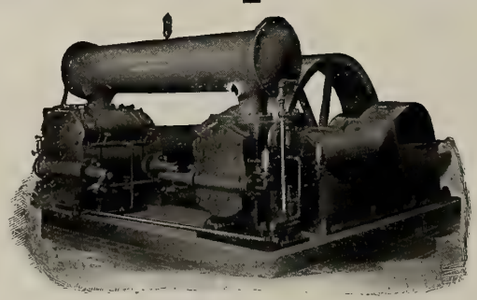


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Industrial locomotives face different conditions. They must work day after day in the hardest service, and often in localities where repairs cannot be made without great inconvenience. That is why we build our industrial locomotives from interchangeable stock parts. With this system every part must fit every other locomotive of the same size and design, and long delays waiting for duplicate parts is avoided. Interchangeable parts kept on hand at our Works for prompt shipment.

MONTREAL LOCOMOTIVE WORKS, LTD.
DOMINION EXPRESS BUILDING, MONTREAL, CAN.

Air Compressors



DB2 AIR COMPRESSOR

EFFICIENT, RUGGED

Moderate in cost. Built to successfully stand severe and continuous service. Full range of sizes and types.

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Works:
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THE NATIONAL-ACME
Manufacturing Company

MAKERS of Special Screw Machine Products from bar stock. Also Standard Screws, Nuts, Studs and Hexagon Brass Nuts at

MONTREAL, P.Q.
De Courcelles & G.T.R., St. Henri



"Every Casting Clean and Uniform"

This is the reason our customers are sending us repeat orders on high-grade

GREY IRON CASTINGS
CORED OR SOLID

PLATING AND FINISHING OF CAST IRON FIXTURE PARTS AND ELECTRO GALVANIZING

We use no scrap when melting our iron, and we are more than commonly careful to see that everything conduces to flawless material and workmanship. A trial order from you will demonstrate the superiority of our service.

YOUR ENQUIRY IS SOLICITED
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Premier
MORE MILES PER GALLON
Gasoline

Experienced motorists know the value of getting, not merely good fuel, but the same fuel every time the tank is filled.

Premier Motor Gasoline is a homogeneous, uniform refinery product —the same wherever you buy it.

Polarine Motor Oil—the lubricant that never thickens from cold.

THE IMPERIAL OIL COMPANY
Limited
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Northern Aluminum Co.
LIMITED

1305-6 Traders Bank Building . . Toronto, Ont.

ALUMINUM

Sheet, Ingot, Rod, Wire, Tubing, Rivets, Extruded Shapes, Bronze Powder and Fabricated articles.

We solicit your enquiries and will be glad to serve you. Our experience and knowledge of the metal will be of value to you.

Write Us

NORTHERN ALUMINUM CO., LIMITED

MALLEABLE IRON
CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ∴ ONTARIO



BRASS, PHOSPHOR BRONZE, COPPER AND ALUMINUM CASTINGS

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

Write for Prices

Tallman's Reputation is in the Goods

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MANUFACTURERS

METAL SPECIALTIES

BRASS AND BRONZE WORK

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SPECIAL MACHINERY

TOOLS AND GAUGES

OUR ENLARGED FACILITIES ENABLE US TO GIVE YOU EXCEPTIONAL SERVICE.

360 St. Paul St. E. - Montreal

DROP
FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited
Welland, Ontario

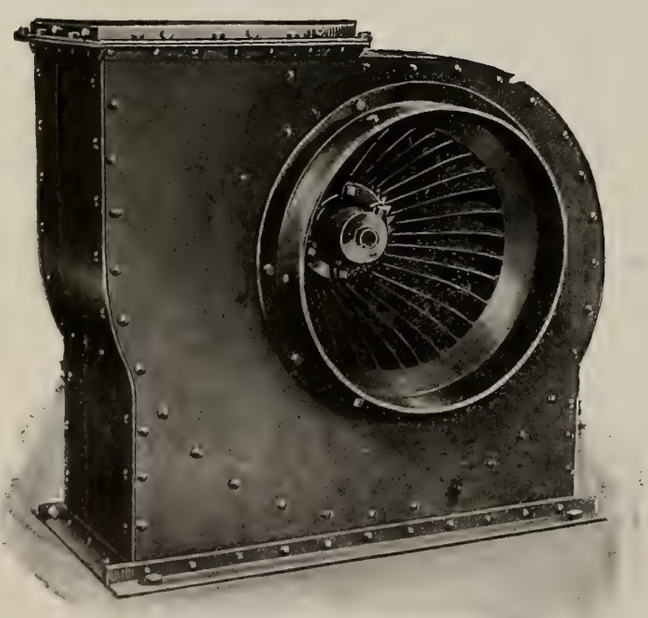
STEEL CASTINGS

Manganese, Chrome, and Nickel Steel Castings from ¼ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears any size up to 18 feet in diameter without the use of patterns

Hull Iron & Steel Foundries, Ltd.

Head Office and Works - - HULL, P.Q.



Keith Fans

For Heating and Ventilating

When it comes to a question of Heating and Ventilating the Factory, Church, School or Public Building, it is imperative that you should select the best and most approved system. The **"Keith" Fan** is specially distinguished for giving greater volume with less power than any other Fan made. Get our Keith Fan Catalogue No. 55 and judge for yourself.

SHELDONS LIMITED - GALT, ONTARIO

Toronto Office—911 KENT BUILDING

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Messrs. GORMAN, CLANCEY & GRINDLEY, LIMITED, Calgary and Edmonton, Alta.
Messrs. ROBERT HAMILTON & CO., LIMITED, Bank of Ottawa Building, Vancouver, B.C.

STEEL CASTINGS

We solicit your enquiry for anything in Steel Castings weighing up to 100,000 lbs.

Manganese, Vanadium, Chrome Titanium, Nickel, Etc.

Our capacity is enormous and our equipment unexcelled for the production of Steel Castings for every purpose, such as

Hydraulic, Mill Gear, Car, Locomotive, Marine, Etc.

Your enquiry will receive immediate and careful attention

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Toronto Sales Office
205 Yonge Street

Acid Open Hearth Steel Castings
for all purposes

Dominion Steel Foundry Company, Limited

ANNUAL CAPACITY 15,000 TONS

Hamilton, Ontario

ELECTRIC STEEL CASTINGS

WE CAN SUPPLY

Carbon Manganese, Alloy, Steel Castings Forging Ingots, Etc.

Write for prices and particulars

The Electric Steel and Metals Company, Limited
WELLAND, ONTARIO

THE CONSOLIDATED MINING AND SMELTING CO. OF CANADA, LIMITED

BUSINESS OFFICE AND WORKS: TRAIL, BRITISH COLUMBIA

EASTERN SALES OFFICE: C.P.R. BLDG., TORONTO

SMELTERS AND REFINERS

Purchasers of Gold, Silver, Copper, Lead and Zinc Ores

TADANAC BRAND PIG LEAD

BLUESTONE, SPELTER AND COPPER

Thomas Robertson & Co., Limited, Montreal

Agents for Quebec and Maritime Provinces

CANADIAN TUBE & IRON CO., LIMITED

MONTREAL, CANADA

WROUGHT PIPE

BLACK AND GALVANIZED
1/8 TO 4 INCH

Thoroughly inspected and tested to 600 lbs. pressure and branded.

Ask Your Jobber for



Brand

Also BOLTS, NUTS, RIVETS—All Kinds

SELLING AGENTS:

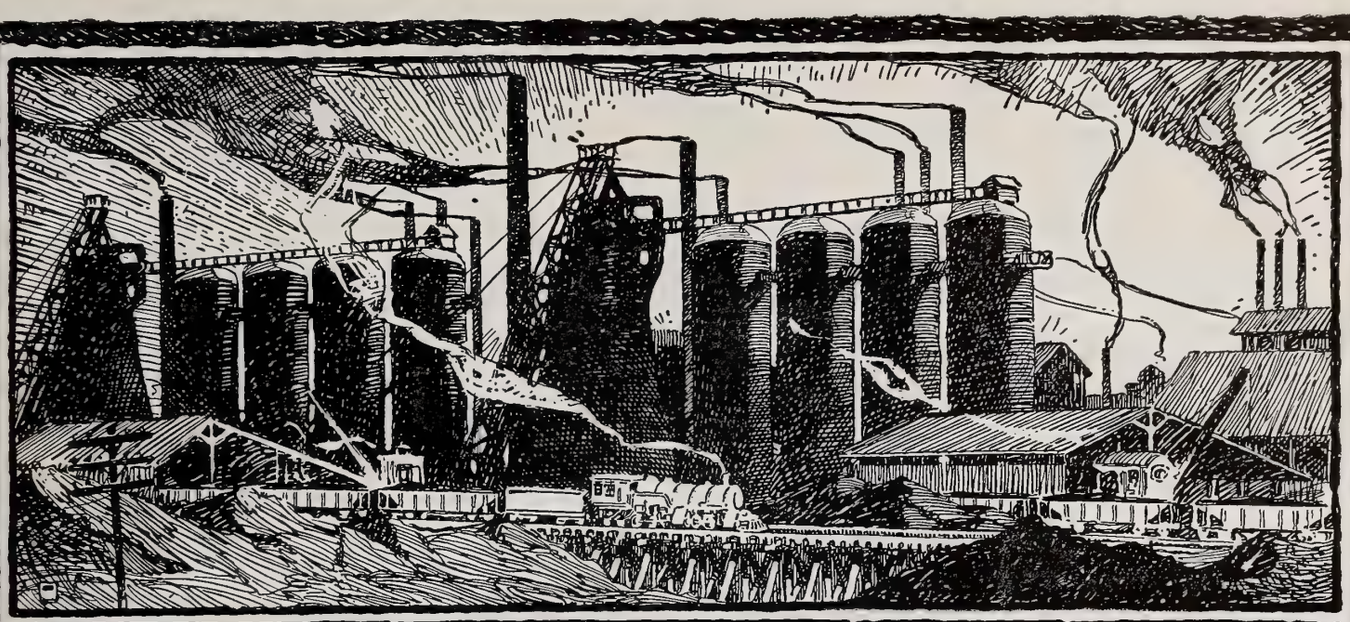
Canadian Rolling Mills Co., Limited

BAR IRON AND STEEL

Colonial Wire Mfg. Co., Limited

WIRES, WIRE NAILS, WOOD SCREWS, ETC.

WORKS: LACHINE CANAL MONTREAL, CANADA



LITTLE WORDS WITH BIG MEANING

Quality

According to "Webster," Quality is "an excellence of character; natural superiority."

Service

Webster's definition of "Service" is; "The performance of labor for the benefit of another."

We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

THE

STEEL COMPANY

OF

CANADA

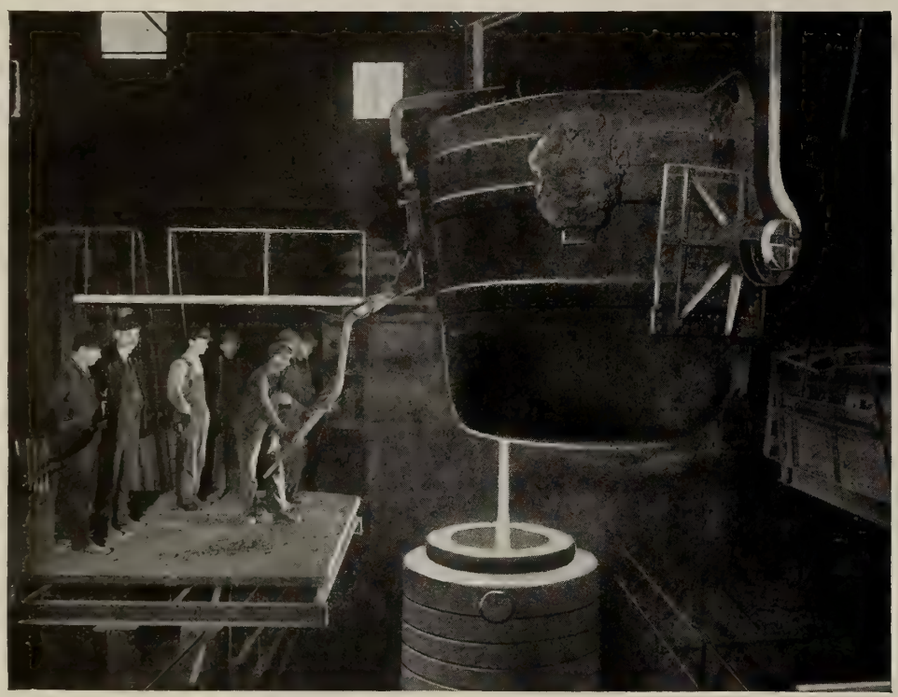
LIMITED

MONTREAL HAMILTON

Pig Iron,
Steel & Iron Bars,
Horse Shoes,
Steel and Iron Products.

Steel Billets,
Track Spikes &
Bolts, Forgings, Wire
of every description.

OUR FIELD IS THE WHOLE WORLD



A 30-Ton Ingot
being poured
at the
Blast Furnace
at
Sydney Mines
N.S.

"OLD SYDNEY COAL"

Shipped from North Sydney, N.S.

At Wabana, Nfld., the Company's Iron Mines are located, these being the richest in ore on the North American continent.

The Company's Collieries and Blast Furnaces are at Sydney Mines, N.S.

From the Steel Works and Car Works at New Glasgow come the Company's finished manufactured products.

Address All Correspondence to the Head Office

NOVA SCOTIA STEEL & COAL CO.
LIMITED

Head Offices:
NEW GLASGOW, N.S.



OFFICE SPECIALTY

HALF SECTIONS

These handy filing units, just half the size of Standard Width Office Specialty Filing Sections, are compact, convenient files just suited for a position alongside or near your desk. Private records, or those records to which constant reference is made, can be kept thus, classified for immediate reference.

Half Section Filing Units are available for every class of business records—letter and cap size correspondence papers, folded documents, card records, cheques, reports, orders, invoices and general storage purposes.

One or two Sections, Top and Base may constitute your filing stack at first and more Sections may be added as requirements demand.

OFFICE SPECIALTY

Filing Devices

SYSTEMATIC care of business records is an absolute necessity for the prompt and profitable despatch of business. To meet these conditions of business, Office Specialty make and supply a Filing Cabinet for every purpose.

"Office Specialty" Filing Sections are made in Steel and Wood.



For long service, extra protection and all 'round satisfaction, choose "Office Specialty" STEEL Filing Sections



OFFICE SPECIALTY

LETTER FILES

"Office Specialty" Upright Vertical Files are the choice of thousands of Canadian offices for correspondence filing. These files are made of beautiful selected quartered oak, or "Corona finished" Steel, either of which represent the apex of Filing Cabinet manufacturing skill.

Consideration of the Filing System is quite as important as the Filing Cabinet, for the speed and accuracy with which papers can be filed and found determines how efficient the filing is.

"Office Specialty" have spent nearly 30 years making and devising Filing Systems. Our experience is at *your* service gratis.

THE OFFICE SPECIALTY MFG. CO. LIMITED

Largest Makers of Filing Devices and Office Systems in the British Empire

All "Office Specialty" Filing Devices are "MADE IN CANADA"

Home Office and Factories: NEWMARKET, CANADA

8 Filing Equipment Stores:

TORONTO	MONTREAL	OTTAWA	HALIFAX
WINNIPEG	REGINA	EDMONTON	VANCOUVER

630

OFFICE SPECIALTY MFG. CO.
NEWMARKET, CAN.
(or nearest Branch)

Please send, without obligation, particulars on Office Specialty Filing Cabinets, Wood ☐ Steel ☐; Record Safe ☐; Efficiency Desks ☐; Card Record Desks ☐; Direct Name System of Vertical Filing ☐; Half Sections ☐; Trucks ☐; Card Index Cabinets ☐

Name.....

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Honour Rolls
and
Illuminated Addresses
also
ENGRAVING
FOR GENERAL
ADVERTISING
PURPOSES

HALF TONES
ZINC, WOOD,
ELECTROTYPING

J. L. JONES
ENGRAVING CO.
LIMITED
133 RICHMOND
STREET WEST
TORONTO
CANADA

BROWN BROS., LIMITED



Manufacturers of

ACCOUNT BOOKS

Loose Leaf Ledgers, Binders, etc.
Leather Goods, Diaries, Paper,
Stationery, Office Supplies

OFFICE AND FACTORY : : TORONTO
SIMCOE, PEARL AND ADELAIDE STS.

Riordon Pulp & Paper
Company, Limited
Montreal

SULPHITE FIBRE WOOD PULP
FOR PAPER MILLS
CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS
SPRUCE" SHEATHING in 36 and
72 INCH ROLLS

SPRUCE LUMBER, CLAPBOARDS
CEDAR SHINGLES, RAILWAY
TIES, FENCE POSTS

Pulp Mills: Hawkesbury and Merritton
Saw Mills:
Calumet, L'Annonciation, Boule, Quennouille, P.Q.

WE DO NOT MAKE PAPER

BANK OF MONTREAL

ESTABLISHED 100 YEARS (1817-1917)

Capital Paid Up - -	$ 16,000,000
Rest - - - - -	- 16,000,000
Undivided Profits - -	1,557,034
Total Assets - - -	386,806,887

BOARD OF DIRECTORS:
Sir Vincent Meredith, Bart., President
C. B. Gordon, Vice-President

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Head Office: MONTREAL

Gen. Manager, Sir Frederick Williams-Taylor
Assistant Gen. Manager, A. D. Braithwaite

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

Branches at all important points in Canada, and at

Agency:

NEW YORK 64 Wall St. — LONDON, ENGLAND 47 Threadneedle St. — CHICAGO 108 South La Salle St.

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

JOHN AIRD, General Manager — H. V. F. JONES, Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 57

THE ROYAL BANK OF CANADA

Incorporated 1869

Capital Authorized	$25,000,000
Capital Paid Up	$12,900,000
Reserve & Undivided Profits	$14,300,000
Total Assets	$270,000,000

HEAD OFFICE, MONTREAL

BOARD OF DIRECTORS

Sir H. S. Holt, President — E. L. Pease, Vice-President and Man. Director
E. F. B. Johnston, K.C., 2nd Vice-President

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G. R. Crowe — W. J. Sheppard — C. C. Blackadar
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Hon. W. H. Thorne — A. E. Dyment — R. MacD. Paterson
Hugh Paton — C. E. Neill — G. G. Stuart, K.C.
Wm. Robertson — Sir M. B. Davis

OFFICERS

E. L. Pease, Managing Director
C. E. Neill, General Manager — F. J. Sherman, Asst. Gen. Manager
W. B. Torrance, Superintendent of Branches

Branches in every Province of the Dominion of Canada and in Newfoundland; in Havana and throughout Cuba, Porto Rico, Dominican Republic, Costa Rica and Venezuela; Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; St. Kitts, Basseterre; Trinidad, Port of Spain, San Fernando; British Guiana, Georgetown, New Amsterdam; British Honduras, Belize.

LONDON, ENG., OFFICE—Princes St., E.C.

NEW YORK AGENCY—Corner William and Cedar Sts.

Savings Department at All Branches

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP $7,000,000 — **RESERVE FUND $7,000,000**

PELEG HOWLAND, President — E. HAY, General Manager

The Bank offers a service of the highest order to Canadian manufacturers because of its 119 Branches located in important industrial and agricultural centres throughout Canada.

COLLECTIONS made at all points in Canada and in foreign centres.

DRAFTS—Money Orders and Letters of Credit issued, available throughout the world.

EXCHANGE—Domestic and Foreign Exchange bought and sold.

SAVINGS received at all Branches—interest credited half yearly at current rate.

Accounts of Merchants and Manufacturers solicited.

HEAD OFFICE - TORONTO

UNION BANK
OF CANADA

Established 1865 Head Office, Winnipeg

Paid-up Capital.....$5,000,000 Reserve Fund.....$3,400,000
Total Assets over.....$109,000,000

IN EXTENDING YOUR EXPORT TRADE

you will find the facilities offered by the Union Bank of Canada a decided advantage in handling Drafts, Collections and Foreign Exchange.

The Commercial Information Bureau established in connection with the Foreign Exchange Department of our London (Eng.) Office is at your service.

London, England, Branches :
6 Princes St. E.C. Haymarket, S.W.

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - $4,866,666
Reserve Fund - $3,017,333

Statement to the Dominion Government (Condensed), 30th April, 1917.

LIABILITIES TO THE PUBLIC.

Notes in Circulation	$ 5,236,467
Deposits	54,763,089
Other Liabilities	947,119
	$60,946,675

ASSETS.

Cash on Hand and in Banks	$10,540,110
Deposit with Government o/a Note Circulation	1,385,694
Government, Municipal and other Securities	13,004,476
Call and Short Loans	7,716,459
Current Loans and Discounts and other Assets	35,882,807
Bank Premises	2,309,564
	$70,839,110

Made in Canada

Canadian Manufacturers using the best kind of Stationery specify

Rolland's Papers

Ask your Printer to show you our selection of Bond, Writing and Ledger Papers. There is a line for every use, each one being the best in its class.

WE RECOMMEND

Superfine Linen Record

for your correspondence stationery.

SAMPLES ON REQUEST

The Rolland Paper Co., Limited

HIGH-GRADE PAPER MAKERS

General Offices : 142 St Paul St. West Montreal, P.Q.
Mills at St. Jerome and Mont Rolland, P.Q.

The Merchants Bank of Canada

Head Office - MONTREAL

Paid-Up Capital	$7,000,000
Reserve Funds	7,421,292
Total Deposits	92,102,072
Total Assets	121,130,558

BOARD OF DIRECTORS

SIR H. MONTAGU ALLAN, C.V.O., President
K. W. BLACKWELL, Vice-President

THOS. LONG, F. ORR LEWIS, ANDREW A. ALLAN, C. C. BALLANTYNE, F. HOWARD WILSON, A. J. DAWES, F. ROBERTSON, G. L. CAINS, A. B. EVANS, E. F. HEBDEN, THOS. AHEARN

E. F. HEBDEN, Managing Director
D. C. MACAROW, General Manager
T. E. MERRETT, Superintendent of Branches and Chief Inspector

A GENERAL BANKING BUSINESS TRANSACTED

233 BRANCHES AND AGENCIES IN CANADA

Extending from the Atlantic to the Pacific

SAVINGS DEPARTMENT AT ALL BRANCHES

Deposits received and Interest allowed at best current rates

New York Agency: 63 and 65 WALL ST.

The Bank of Nova Scotia

ESTABLISHED 1832

Capital	$6,500,000
Reserve Fund	12,000,000
Total Assets	Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

UNITED STATES: Boston, Chicago, New York
CUBA: Havana
PORTO RICO: San Juan
JAMAICA: Kingston and 9 other points.
NEWFOUNDLAND: St. John's and 16 other points.

LONDON AGENTS:
The London Joint Stock Bank, Limited

With its widespread system of branches and established connections in Foreign Countries this Bank is especially well equipped to handle the accounts of exporters.

CORRESPONDENCE SOLICITED

General Office: Toronto, Canada

H. A. RICHARDSON, General Manager



Hold Up Your Stationery to the Light

and see that it contains this

WATERMARK

It is your guarantee for

QUALITY

Made-in-Canada

BY

Howard Smith Paper Mills, Limited

138 McGILL ST., MONTREAL
Mills at BEAUHARNOIS AND CRABTREE MILLS, QUE.

CANADIAN NATIONAL EXHIBITION

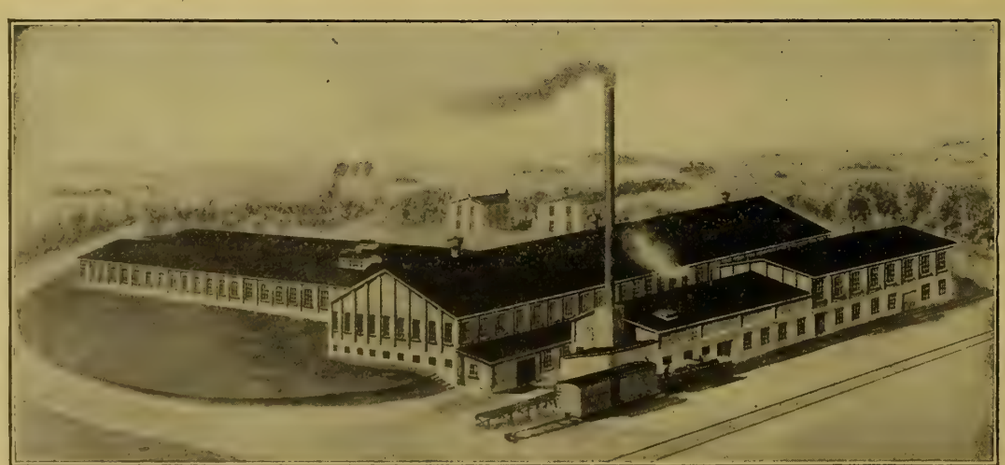
1867 Canada's Jubilee Year 1917

Space is now being allotted in the various buildings devoted to manufacturers. Early enquiries indicate an exceptionally heavy demand for accommodation in all departments.

FOR EXHIBITORS WHO HAVE NOT SECURED THEIR SPACE **IMMEDIATE ACTION IS ADVISED**

Dates are—August 25th to September 10th.

"WORLD'S LARGEST ANNUAL EXPOSITION"



Coating Mill, Barber Division, Georgetown, Ont.

The Largest and Best Equipped Mill in Canada for the Coating of Paper.

"Maple Leaf" "Beaver" "C.A." Coated

Insist on these Brands being used in your Catalogue

PROVINCIAL PAPER MILLS CO., Limited

Toronto Office: Telephone Building. Private Exchange Adelaide 1986



Canadian WOOD Turpentine

A very superior solvent
and a high-grade diluent

Made in Canada from
Canadian woods

BY

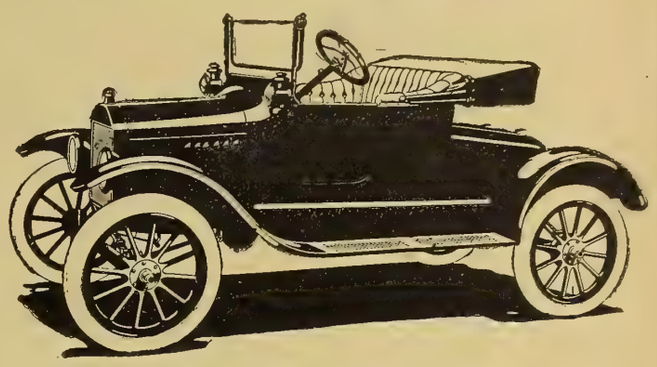
BROWN CORPORATION

Mills at La Tuque, P.Q.

Sales Office at Portland, Maine

Write to our Sales Office for price

The Ford Runabout A Great Time Saver



THE Ford is the popular choice among salesmen, collectors and business men in general. It is everywhere a great favorite because of its low initial cost, dependability and ease of operation. See the nearest Ford dealer without delay.

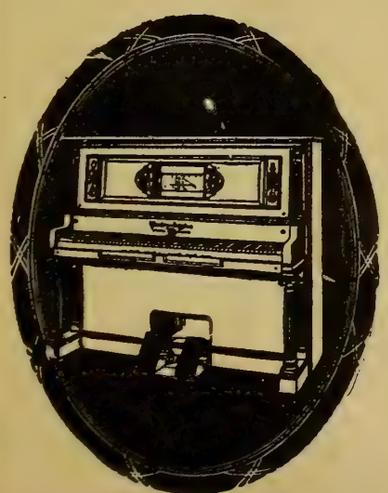
Price $475. F.O.B. Ford, Ont.

FORD MOTOR CO. OF CANADA, Limited

FORD - ONTARIO

Men forget business cares in the enjoyment of

Gourlay-Angelus Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,

188 Yonge St., Toronto

BEAVER BRAND

MADE IN 

CANADA

"BEAVER BRAND" METALS

QUALITY AND SERVICE

BROWN'S COPPER & BRASS ROLLING MILLS LIMITED

General Offices and Mills

New Toronto, Canada

The John V. Gray Construction Co. Ltd.

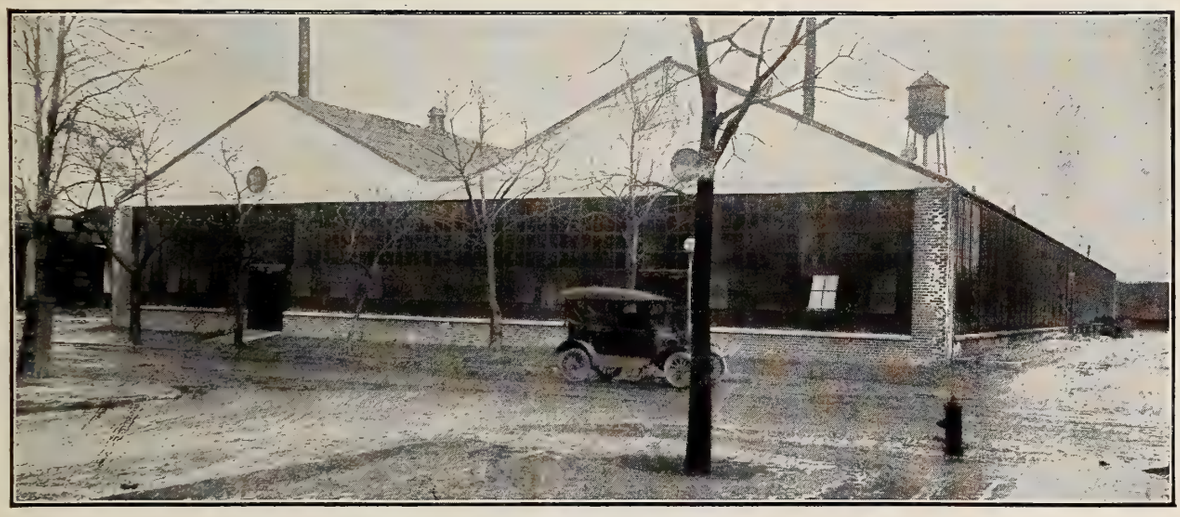
GENERAL CONTRACTORS

625 CONFEDERATION LIFE BUILDING . TORONTO, ONT.

ALL CLASSES OF BUILDING CONSTRUCTION

REINFORCED CONCRETE SPECIALISTS

OUR WORK SPEAKS FOR US



Another Modern Factory Building Daylighted with Truscon Steel Sash

Wilt Twist Drill Co., Walkerville, Ont.

Samuel Austin & Son Co., Contractor

The efficiency of their workmen has been greatly increased through the use of TRUSCON STEEL SASH, which can be furnished to comply with practically every requirement of Architect or Engineer.

TRUS-CON SYSTEM Building Products

TRUSSED CONCRETE STEEL COMPANY
OF CANADA, LIMITED

WALKERVILLE - ONTARIO

MONTREAL TORONTO WINNIPEG

TRUS-CON SYSTEM Building Products



DO-ME-KO represents a Complete Line of Babbitt and White Metal Products, especially designed to meet exacting needs of modern machinery.





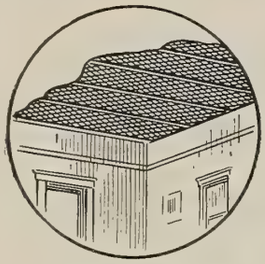
Catalogue giving valuable information mailed free upon request. Jobbers looking for a "Winner" should communicate with us.

THE DOMINION METAL COMPANY LTD.

FOSS & HILL MACHINERY COMPANY
305 St. James St., Montreal, Que.
Selling Agents for Montreal.

SHERBROOKE, QUE., CANADA.

Safer Construction—At Less Cost



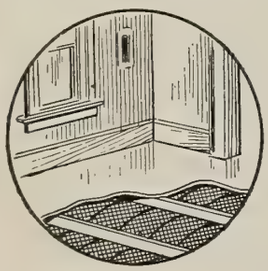
Even before your plans are complete, consider the effect of time and decay on the walls, ceilings, floors and roofs of the buildings you are planning to erect. Why risk the loss of unending repairs and the lessening value of your buildings when



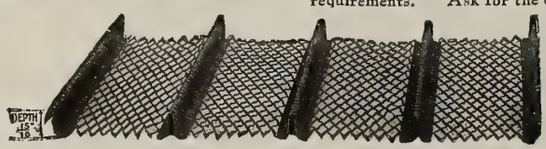
PEDLAR'S RIB FABRIC

will give you permanent safety and protection at the cost of ordinary construction? Not only is it the strongest fireproof reinforcement by actual tests, but it simplifies construction, does away with costly forms and saves you money at every turn, even in the erection of your structure.

Pedlar's Rib Fabric binds itself to the plaster or concrete with such a definite, unyielding grip, permanent smoothness and safety are a practical certainty. Made in three depths of rib:—deep-rib, five-rib and three-rib and in gauges to suit any requirements. Ask for the complete Fireproofing Catalogue I.C.



Made in Three Depths of Rib



High-Rib
Three-Rib
Five-Rib



The PEDLAR PEOPLE, Limited

(Established 1861)

EXECUTIVE OFFICE AND FACTORIES: OSHAWA, ONT.

Branches: Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver

1192

DOMINION COPPER PRODUCTS CO.
LIMITED

Copper, Brass and all Copper Alloy Tubes, Sheets and Rods Rolled, Drawn and Extruded Metals

Office and Works:

Lachine Locks, P.Q., Canada

P.O. Address: MONTREAL, P.Q. Cable Address: "DOMINION"



A few of the buildings comprising the plant of The International Nickel Co. of Canada, Limited, being constructed at Port Colborne, Ontario

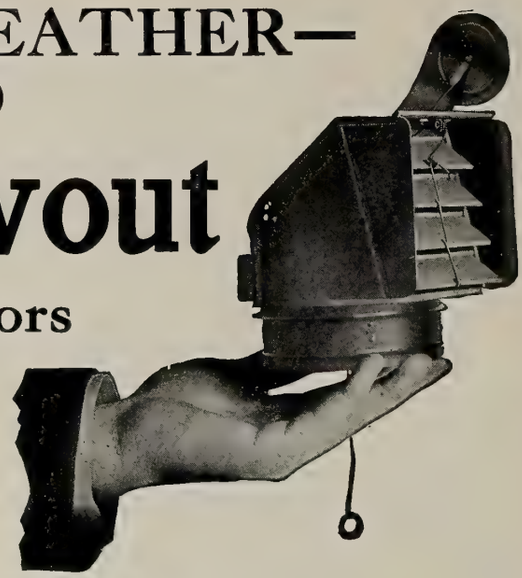
THE FOUNDATION COMPANY
LIMITED
ENGINEERS CONTRACTORS

BE READY FOR HOT WEATHER—

(Don't let production fall off)

Ormsby-Swartwout

Rotary Ball Bearing Ventilators



DON'T let hot, sultry "dead" air make your workers sluggish—don't let production and profits fall off as the temperature rises.

Install the ORMSBY-SWARTWOUT—the semi-mechanical ventilator which applies the free power of the passing breeze, to insure a steady *costless* flow of fresh air. For facts and figures on improved working conditions write

THE A. B. ORMSBY COMPANY, Limited, Toronto

VENTILATION DATA

Send for 24-page Ventilation Hand-Book—*"The Gospel of Fresh Air."* Gladly mailed **FREE.**

Please send Ventilation Handbook, *"The Gospel of Fresh Air,"* to

Name .....

Company .....

Address.....City.....Kind of Business.....

STRUCTURAL STEEL

.. AND ..

BRIDGE BUILDERS



We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of Beams, Column Sections, Angles, Tees, Plates, Bars, Checkered Floor Plates, etc.

McGregor & McIntyre, Limited

1139 SHAW ST. TORONTO, CAN.

Standard Clay Products Limited

MANUFACTURERS OF

Salt Glazed, Vitrified Sewer and Culvert Pipes

4 inch to 30 inch

Square and Round Flue Linings, Inverts, Building Blocks

Fire Clay Stove and Range Bricks, Locomotive Arch Blocks

And All Shapes in Fire Clay

FACTORIES AT

ST. JOHNS, P.Q., and NEW GLASGOW, N.S.



Paper Shell Factory, Peters Cartridge Co., Kings Mills, Ohio

Our Record with Peters Cartridge Co.

Nov. 1915.	Paper Shell Factory	$195,000.00
Jan. 1916.	Annealing Bldg.	10,000.00
Mar. 1916.	Power Plant	150,000.00
June 1916.	Imhoff Tank	5,000.00
Mar. 1917.	Packing Case Bldg.	175,000.00
Mar. 1917.	Shot Tower	100,000.00
	Total value of Contracts	$635,000.00

We always try to carry on each contract in such a manner as will ensure us the next contract which the owner may have to let.

WELLS AND GRAY, Limited

ENGINEERS AND CONTRACTORS

Branch Office:
Bank of Commerce Bldg.
Windsor, Ont.

Head Office:
247 Confederation Life Bldg.
Toronto, Ont.

JOLIETTE STEEL
TRADE MARK REGISTERED

Steel Castings of Quality Coupled with Service

Send us your Patterns for a trial order.
You will appreciate our deliveries and the quality of our steel.

MONTREAL OFFICE :
903 Read Bldg.
45 St. Alexander St.
MONTREAL

JOLIETTE STEEL CO., Limited
JOLIETTE, P.Q.

HEAD OFFICE AND WORKS :
JOLIETTE, P.Q.

REGINA Saskatchewan's Capital

REGINA is the Capital and Commercial Centre of Saskatchewan, the Grain Growing Province of the Dominion. REGINA is growing solidly and steadily. Note these figures :

Total Assessment, 1906	$ 7,047,267
" " 1916	68,072,210
Taxable Assessment, 1906	$ 5,889,734
" " 1916	50,969,645

Post Office Business Returns.

1914	$2,746,154
1915	3,064,312
1916	6,377,986

Bank Clearings.

1910	$50,739,159
1915	87,122,611
1916	124,349,589

Customs Receipts.

1915	$ 653,915.00
1916	1,505,019.21

SURPLUS OF ASSETS OVER LIABILITIES, SIX AND A HALF MILLIONS

Fire loss, 1915	$29,721.49	1916 (11 months)	$10,561

Manufacturers and Wholesalers

REGINA is noted as an industrial and distributing centre ; has a model industrial section, so planned and laid out as to incorporate all possible advantages for your business.

This district is served by spur tracks from the trans-continental railways ; has pavements, sewers, water, electric light and power, street railway services, etc. Sites in this district can be purchased at low prices by bona fide firms. The city owns in this district warehouse property valued at two million dollars. The municipal power plant supplies power for manufacturing at exceptionally low rates. Over a score of new business enterprises have been established in this district since the war started, among which are two of the largest concerns in Canada, who have invested here several millions.

Applications invited and detailed information furnished promptly.

CITY COMMISSIONER,
REGINA, SASK.

BATHURST



LUMBER

Dry Spruce and Pine, Rough or Dressed

SHINGLES

"BEAVER BRAND" Cedar—FULL COUNT

EXTRAS
CLEARS
2nd CLEARS

A shingle for every purpose. Well manufactured, carefully bundled, metal-tied, full count.

CLEAR WALLS
X No. 1
No. 1

Buy by the brand. "BEAVERS" are made from the everlasting New Brunswick White Cedar

Monthly Stock and Price List on Request

Bathurst Lumber Co., Limited, BATHURST, N.B.

ARTICLE NO. THREE

This Time We Want to Tell You

How Meadows Lockers Are Locked



PATENTED

The illustration shows our "SURE-GRIP" LOCKING DEVICE. It is made of special hard-drawn steel, held in place by six steel guides, and locks the door at three points. This means ABSOLUTE SECURITY! Your workman's belongings will be safe if protected by the "SURE-GRIP." This is an exclusive feature of the MEADOWS LOCKER.

It may be arranged for either Padlock or Cabinet lock as shown

The GEORGE B. MEADOWS, Toronto Wire, Iron & Brass Works Company, Ltd.

479 West Wellington St., Toronto, Canada

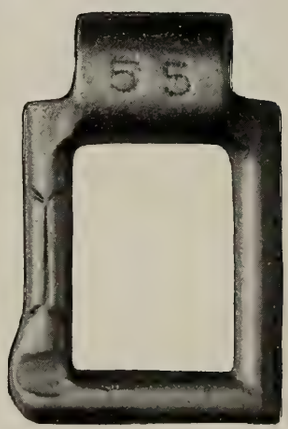
LINK-BELT

Elevators and Conveyors for Every Purpose

WE SELECT the type of elevator or conveyor to suit the individual requirements. Our line covers the entire range of approved appliances for the efficient and economical handling of materials.



"MADE IN CANADA"
Our Toronto Works and Warehouse



EWART LINK-BELT

Designed for general industrial work—elevating, conveying and power transmission.

A variety of attachments is made, adapting Ewart Link-Belt to the individual requirements of practically every industry.

This is the >——< Mark of Quality. It appears on every Link-Belt manufactured by us, and is your guarantee of reliability in material, workmanship, inspection and service.

Write for General Catalog No. 110, which illustrates the entire Link-Belt line. Submit your problems in elevating, conveying and power transmission to us for solution.

Manufacturing Plant and Offices

CANADIAN LINK-BELT CO., LTD.

265 WEST WELLINGTON ST.
TORONTO

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Carbide of Calcium, made by the CANADA CARBIDE COMPANY, Limited, is packed in Green Drums.

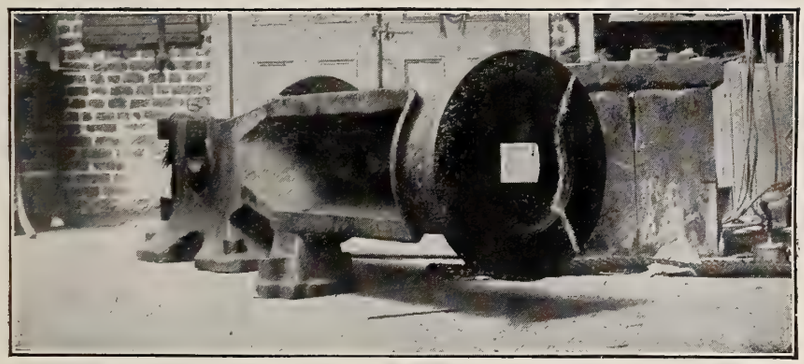
We make a first grade only

Where pure ACETYLENE is required you must have first grade CARBIDE.

The best costs you no more and gives you better results.

Works:
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Canada Carbide Company, Limited
MONTREAL - CANADA



Broken cylinder reclaimed by Oxy-Acetylene Welding.

The High Cost of Machinery Maintenance

can be reduced 75 per cent. with the use of

OXY-ACETYLENE WELDING and CUTTING EQUIPMENT

RECLAIM BROKEN CASTINGS
Repair Broken Machinery—
at a fraction of the cost of replacement

THE APPLICATION OF THE PROCESS
in your plant unlimited.
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"SERVICE FIRST." Be protected in your requirements by the only organization of its kind in the world, manufacturing in Canada complete equipment of proven unequalled efficiency—Oxygen, Acetylene, Gases, Supplies, every requisite for the successful application of the Process. Employing Expert Efficiency Engineers, "At Your Service."

WHAT YOU REQUIRE
An ideal portable Outfit comprising Blowpipe, Gas Pressure Regulators, Tubing, is operated in conjunction with Oxygen and Acetylene Gases supplied in loaned Cylinders, obviating the necessity of investment on the part of the Consumer. Complete equipment weighs less than 300 lbs., and by opening of valve is ready for instant use. The cost (approx. $130.00) is very often covered by saving effected on one or two jobs.

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PIONEERS OF THE PROCESS FACTORIES THE WORLD OVER

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WALKERVILLE, ONTARIO

MANUFACTURERS

RAILWAY AND HIGHWAY BRIDGES

Locomotive Turn Tables. Roofs, Steel Buildings and Structural Iron Work of all Descriptions



MACDONALD MANUFACTURING CO., LIMITED, TORONTO

We Specialize on Cans or Boxes required for Customer's Exclusive use
Practically Nothing Else made in our Entire Plant
This Ensures Undivided Attention to Your Particular Order

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DOMINION BRIDGE COMPANY, Limited

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Large Stock of Standard Structural Material at All Works

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WATER WORKS SYSTEM, TELEPHONE SYSTEM ELECTRIC LIGHT SYSTEM and HYDRO ELECTRIC POWER

and is advantageously situated for Eastern and Western Trade; on Canadian Pacific Railway west of the Great Lakes.

10,000 Electric Horsepower
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FOR SALE OR LEASE

FACTORY NO. 1:—Three stories, modern mill construction, floor space 15,000 sq. feet, light on all sides; adjacent to railway tracks, forge shop in rear, equipped with steam heating plant, elevator, wired for power and light. Suitable for metal working industry.

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For further particulars, etc., apply
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(*Made in Canada*)

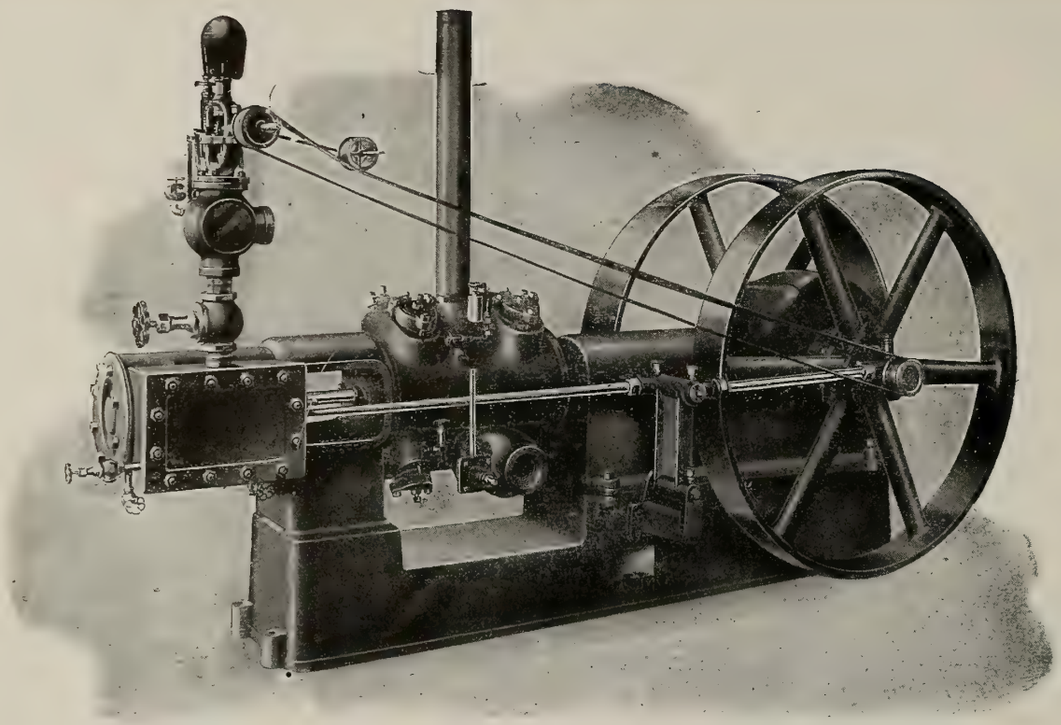
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Have you a high overhead expense which is largely made up of non-productive labor employed in handling your product?

WE CAN CUT IT DOWN

Write for our Sales Engineer to call. We are specialists on conveying problems.

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STRAIGHT LINE, STEAM DRIVEN SINGLE STAGE AIR COMPRESSORS

This type, designated as Class "FL-1," is peculiarly suited to the needs of industries requiring units of capacities under 500 cubic feet per minute.

By disconnecting the valve gear and steam piston, it may be converted to a belt or motor-driven machine, if desired, and as readily changed back to its original arrangement.

For complete satisfaction as to air compressor service, you want

Efficient and Silent Air Valves
Automatic Splash Lubrication
Complete Accessibility
Compact, Self-Contained and Rigid Construction

You get all these features, plus other desirable points, in the type illustrated above.

We have a new bulletin in press describing this class of compressor. May we register your name for a copy when ready for distribution? Our nearest office will be glad to hear from you.

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COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Works : SHERBROOKE, QUE.

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Manufacturers of

"CROWN BRAND" LIQUID CARBONIC ACID GAS

QUALITY AND SERVICE

Acetic Acid Refined
Acetic Acid Crude
Acetic Anhydride
Acetate of Soda
Acetate of Lime

Acetone Pure
Acetone Alcohol
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Charcoal
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Made in Canada

Standard Chemical, Iron and Lumber Co.

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STANDARD Wires and Cables

Wire Rods
Bare Copper Wire
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(Colonial Copper Clad)
Magnet Wire
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Rubber Insulated Wire
Varnished Cambric Cable
Fibre Lead-Covered Cable
Paper Lead-Covered Cable
Rubber Lead-Covered Cable
Armored Cables

and Cable Accessories

Cable Terminals
Cable Junction Boxes
"Ozite" Insulating Compounds
Miscellaneous Cable Accessories of all kinds
Cable Installations

For detailed information, samples, estimates or prices write our nearest office.

Standard Underground Cable Co.
of Canada, Limited

Hamilton, Ont.
Montreal, Que. Winnipeg, Man.
Seattle, Wash.

FOR SALE The Following Second-hand MOTORS in Good Order :

3 phase, 60 cycle, 220 volts

No.	H.P.	Speed.	Make.	Type
1	50	850	Westinghouse	CCL
1	40	850	Westinghouse	CCL
2	30	1120	Westinghouse	CCL
1	20	1120	Westinghouse	CCL
2	10	1120	Westinghouse	CCL
1	7½	1800	Westinghouse	CCL
2	5	1800	T. & H. Elec. Co.	New
2	1	1800	Westinghouse	CCL

2 phase, 60 cycle, 220 volts

No.	H.P.	Speed.	Make.	Type
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2	40	850	Westinghouse	CCL
4	30	1120	Westinghouse	CCL
1	30	850	Westinghouse	CCL
1	20	850	Westinghouse	CCL
5	20	1120	Westinghouse	CCL
1	15	1120	Westinghouse	CCL
11	10	1120	Westinghouse	CCL
2	10	1800	Can. General Elec.	
1	10	1800	Tor. & Ham. Elec.	
2	7½	1800	Westinghouse	CCL
5	5	1800	Westinghouse	CCL
9	5	1120	Can. General Elec.	
2	5	1800	Tor. & Ham. Elec.	
1	3	1800	Westinghouse	CCL
2	2	1800	Can. Crocker Wheeler	
3	1	1800	Westinghouse	CCL

1 ..... **Auto Starter—new—C.G.E., 220 volts, 60 cycle, 3 phase.**

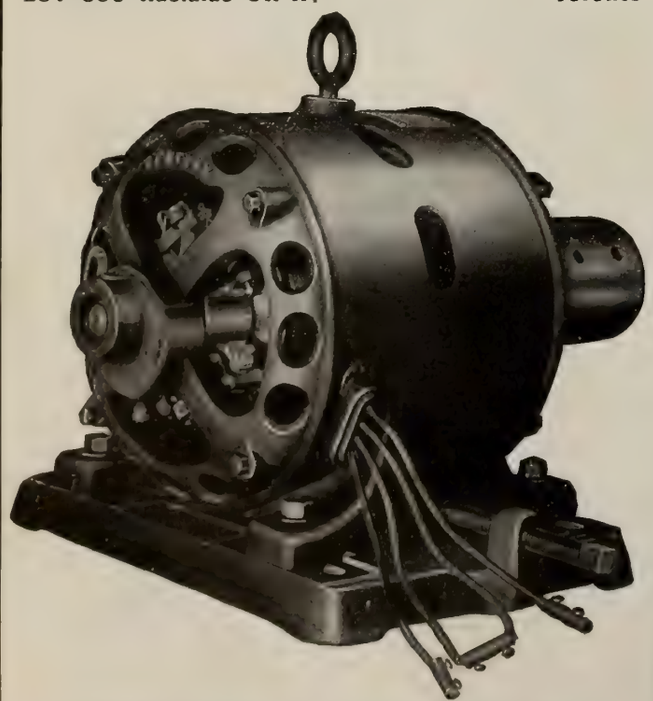
TRANSFORMERS
60 cycles, 2200 primary, 220 volt, Secondary.

4	25 k.w.	Westinghouse.
2	75 k.w.	Can. Crocker Wheeler.
2	50 k.w.	Westinghouse.
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2	5 k.w.	Packard.
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For Deliveries and Prices, Write

TORONTO & HAMILTON ELECTRIC CO., Limited
HAMILTON - ONTARIO

Jones & Moore Electric Co.
LIMITED
294-300 Adelaide St. W. - - Toronto



MANUFACTURERS OF DYNAMOS AND MOTORS
REPAIRS PROMPTLY PERFORMED

MADE-IN-CANADA

Toronto, Ontario

Mr. Manufacturer:—

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CYLINDER OIL
ENGINE OIL
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DYNAMO OIL
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PARAFFINE WAX
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CANADIAN OIL COMPANIES LIMITED
Quality First
NATIONAL BRANDS

WHITE LEAD
READY MIXED PAINT
COLORS IN OIL
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BLACK JAPANS
STEEL BRIDGE PAINTS
ROOFING PAINTS
CUP GREASE
LINSEED OIL
SOAP

Are You Sure Your Electrical Wiring is Safe?

There is but one absolutely safe method of wiring. Install a CONDUIT SYSTEM — it will eliminate all risk of Fire.

"Galvaduct" & "Loricated" "Conduits"

HAVE NO EQUALS

Conduits Company Limited

TORONTO *MONTREAL*



THE BEST-KNOWN CABLE REEL IN CANADA

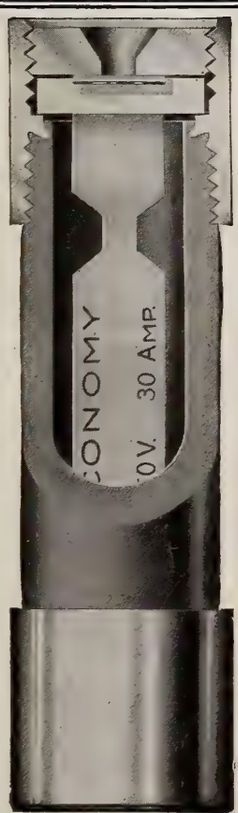
In Halifax or Vancouver, whether on the public thoroughfares of our larger cities or smaller towns, wherever there is a cable installation in progress, the reels invariably bear the name of the Northern Electric Company, Limited.

The installation may be overhead, underground or submarine. It may be for a Telephone Company, a Telegraph Company, a Railroad Company or for a street lighting system.

The quality, both of the product and the service, is largely the reason for the universal demand for Wires and Cables of Northern Electric manufacture

Northern Electric Company
LIMITED

Montreal Ottawa London Regina
Halifax Toronto Winnipeg Calgary
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"Look for the Gray Shell"
It Means an 80% Saving on Fuse Costs

An 80 Per Cent. Saving

should be of interest to every manufacturer. And that is just what we offer you—a saving of 80% yearly on fuse costs.

ECONOMY renewable cartridge FUSES

should always be used to break the electrical circuits when excessive currents cause fire and accident hazards. Safe under all conditions of service, Economy Fuses have the additional advantage over old-style "one-time" fuses of being renewable — just the replacement of an inexpensive "Drop Out" Renewal Link restores an Economy Fuse (after it has operated) to its original efficiency.

Thus Economy Fuse users (large and small) cut annual fuse maintenance expense 80% besides obtaining positive protection.

Free Samples on Request

Write us for Catalog 40, stating the capacity and voltage required, and we will send you free samples. Test them. Figure up the saving they effect. That is the way we sell Economy Fuses.

MADE IN CANADA AND APPROVED BY THE CANADIAN BOARD OF FIRE UNDERWRITERS

Economy Fuse & Mfg. Co. of Canada, Limited

UNITY BUILDING, MONTREAL

Manufacturers in Canada of "S & C" High Potential Fuses—to 150,000 Volts

BETTER Work and MORE OF IT

Correct lighting conditions in your factory will help you to realize, and maintain, the maximum of accuracy and quality in your product.

SAVE
Your worker's eyes.
The waste in light.
Your costly materials from waste in spoilage.

Benjamin

--Reflectors,--properly applied,--MEAN CORRECT LIGHTING conditions in YOUR FACTORY

We offer you the services of our engineers as readily as we do a copy of our latest catalogue. Both free of charge or obligation to you.

Benjamin Electric Manufacturing Company Limited

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Attractive Useful Distinctive

This calendar business men are glad to hang in their offices.

Delivers its *advertising* message with *telling force* every hour of the working day.

We'll design one equally as effective for *your* business.



Try it for the second half of 1917, or let us give you a proposition *now* for next year.

Consult us also on Catalogues, Booklets, Folders, or other publicity in any number of colors. Our equipment and long experience ensure high quality and quick service.

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CANADA'S LEADING PRINTERS

Luxacoted Porcelain Book and Red Seal Coated Book

MADE IN CANADA AND SOLD ONLY BY

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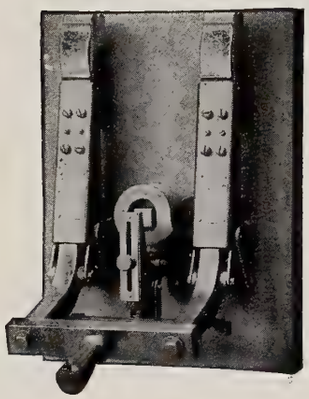
"Specified by Canada's Leading Electrical Engineers

Westinghouse

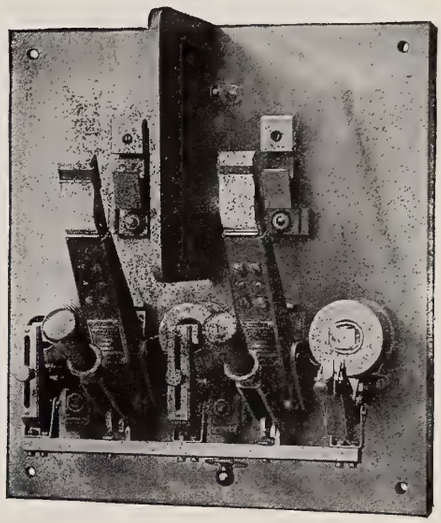
Type CD Carbon Circuit Breakers



Single-Pole, Rear Connected, with Overload Tripping Coil, 50 Amperes, 600 Volts.



Two - Pole, Rear Connected, with One Overload Tripping Coil, 100 Amperes, 300 Volts.



Two-Pole, Front Connected, with Separate Closing Handles and Common Trip. One Undervoltage and Two Overload Tripping Coils, 100 Amperes, 600 Volts.

These Carbon Circuit Breakers are especially adapted for industrial plants, on switchboards for the control of feeder circuits, and in front-connected separate mounting form for individual motor control.

Punched-steel construction makes them the strongest breakers of their size on the market.

Fully described and illustrated in Catalogue Section DS-238; send for a copy.

Canadian Westinghouse Co., Limited, Hamilton, Ont.

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Traders Bank Bldg.	52 Victoria Square	Ahearn & Soper, Ltd.	105 Hollis St.	Telfer Bldg.

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Made in Canada



Ridley Park Roads, York Township, Ont.
Constructed with Tarvia-filled Macadam, 1914

Greatest Road Efficiency at Lowest Cost!

WHAT wears out a macadam road? Not so much the weight of the traffic or the friction of the wheels carrying that weight, as the *pry* and *dig* of the motive force.

With the horse it is the pry and dig of his iron shoes, and with the automobile it is the prying leverage of the driving-wheels that disintegrates the macadam.

The heavier the weight and the greater the traffic, the harder and the more incessant is the pry and dig.

The way to correct this is to *build and treat your roads with Tarvia.* Its use slightly increases the first cost, but it adds so much to the life of the highway and reduces maintenance expense so materially that *its use is a great economy.*

About Tarvia

Tarvia is a coal-tar preparation, shipped in barrels or in tank-cars.

It is made in three grades, to be used according to road conditions, *viz.*: "Tarvia-X," "Tarvia-A," "Tarvia-B."

The chief use of Tarvia is for constructing and treating macadam roads to make them durable, smooth, resilient, dustless, mudless, waterproof.

"Tarvia-X"

"Tarvia-X" is always to be used when you are building a *new* macadam road, both as a binder and surface coating. The old way in building macadam was to use *water* as a binder.

But a water-bound macadam wears out quickly under modern traffic that loosens the surface, grinds it into clouds of dust, makes heavy mud, and leaves the road full of holes.

Results and Cost of "Tarvia-X"

With "Tarvia-X" in place of water, you have a road smooth enough to dance on; resilient enough for rubber tires to grip on without skidding or for horses to trot on without slipping; without dust in dry weather; without slime in wet weather. You have a road that *lasts.*

The first cost of making a tarvia-macadam costs but little more than the old-fashioned macadam, but the saving in maintenance more than pays this difference. So Tarvia costs practically nothing!

"Tarvia-A"

"Tarvia-A" is practically a thin "Tarvia-X," used for recoating the surface of a macadam road already built. It is applied hot and adds greatly to the life of the road. It keeps the road dustless, smooth and inviting to traffic, but its use is confined to certain kinds of traffic to be economical.

"Tarvia-B"

"Tarvia-B" is a much more widely used preservative. It is applied *cold.* It is thin enough to sink quickly into the road, yet strong enough to bind the surface particles together into a dustless, durable surface. "Tarvia-B" offers the lowest cost of road maintenance yet invented.

Tarvia roads give a maximum of road efficiency for a minimum of cost.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems.

The advice of these men may be had for the asking by any one interested.

If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will have prompt attention.

THE PATERSON MANUFACTURING COMPANY, LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER
THE CARRITTE-PATERSON MANUFACTURING CO., LIMITED
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVIII. TORONTO, JUNE, 1917 No. 2

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

SUBSCRIPTION

Two Dollars per Year **Single Copies 20 cents**

Advertising Rates made known on application

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The Annual Meeting.

ARRANGEMENTS for the holding of this year's annual convention of the Canadian Manufacturers Association in Winnipeg are already complete. As previously announced, the dates set for this important gathering are the 12th, 13th and 14th of the present month, and the place of meeting will be the splendid new Fort Garry Hotel, unquestionably one of the most palatial hostelries in North America, admirably fitted in every respect for holding such an assembly.

A special, illustrated article on the convention city appears elsewhere in this issue, its purpose to arouse interest in this wonderful city of the plains. Members of the Association, who have never seen Winnipeg, as well as those who have not visited it in recent years, should not lose the opportunity afforded by the holding of this year's convention at this point, to behold for themselves its great expansion, as well as to get into direct personal touch with the West.

Owing to the numerous difficulties with which all the railways are now having to contend, it will be impossible for any of them to offer special train service for eastern delegates. The fact, however, that there are no fewer than five alternative routes from the east to Winnipeg, gives the compensation of variety in making the trip. The convention excursion has always been an enjoyable feature of the meeting, but this year it must be foregone and it is hoped that the situation will be accepted without complaint as one of the many things which the necessities of war have forced us to relinquish.

The Tin Plate Scarcity.

A LETTER has been addressed by Sir George Foster to the principal canning companies of Canada, suggesting the desirability, in view of the great scarcity of tin plate, of their adopting the plan agreed upon by United States canners to discontinue for the present, the packing in tins of beans, spaghetti, hominy and other products of a non-perishable character, as also soup.

Sir George has been discussing the situation with the Secretary of the Department of Commerce at Washington and a common line of action has been agreed upon. The American secretary, while hoping that Canadian army contractors will be able to send pork and beans to the trenches in some other form than cans, is yet prepared to allow makers of cans in the United States to continue to supply them to Canadian canners, on the assurance of the Department of Trade and Commerce that the cans will be used solely for army purposes.

It is a situation demanding careful consideration and it is to be hoped that the Canadian concerns engaged in the work of supplying canned goods to the army in France will be able to devise means to overcome the difficulty effectively.

Vacations and Recreation as Usual.

THERE is a disposition on the part of some unwise pessimists to cut out all the joy in life, all recreation and pleasure simply because we are at war, says the *Manufacturers' News.*

It is not aiding a bad situation to look on the worst side of things. People should maintain their health and mental vigor by taking their usual vacations and those who can afford it should spend their money as usual, for

only by this policy can the welfare and courage of the nation be maintained.

Authorities of the United States Government are entirely opposed to false economies during these critical days. They recommend that people go to Yellowstone Park and other famous resorts maintained by the nation.

Lincoln, when he was carrying on the great responsibility of the Civil War, made a special effort to relieve the pressure on him by seeking amusement, and President Wilson and his wife may be seen every fine day when the President can get away playing golf at one of the Washington country clubs.

Motives for Canadian Designs.

AN interesting communication has come to hand this month from the archæologist of the Geological Survey, Ottawa. It develops that he is now in a position to supply the manufacturers and their commercial artists motives for decorative and symbolic designs and trade marks. These motives are all from prehistoric Canadian art and handiwork. Such archæological material supplies not only the oldest human decorative material from Canada, but material unsurpassed in distinctiveness.

Mr. Joseph Keele, of the Ceramic laboratory of the Department of Mines, has used some of these shapes and designs in the modelling of part of the vases made to test Canadian clays. Many of these pottery products after serving their purpose were given to the Womans' Canadian Club, which sold them for the benefit of the Red Cross. At the sale there was a greater call for the vases made after these Canadian designs than for any of the others. This seems to prove that there is a demand for motives for new and characteristic Canadian designs and trade marks. This demand we may expect to grow in the near future when, at the close of the war, Canada wishes to stand at least on an even footing with other countries in producing manufactures recognized all over the world as individually and characteristically her own.

The office has a very complete series of British Columbian archæological motives and is rapidly completing a list exhausting all the known Canadian archæological motives. It is also able to give the range of most of these so that a British Columbian manufacturer, for instance, may know which motives are appropriate for British Columbian manufactures rather than use one appropriate only for Manitoba. Directions can be given to the actual objects in other museums, to illustrations of them and to literature. These motives may be used as they are or conventionalized or dissected or multiplied or in several of these ways.

Such designs may be applied to such lines of work as work on fronts of buildings, gargoyles, fountains, terra cotta, pottery, china, ornamental work of all kinds, cast iron railings, stoves, carpets, rugs, linoleum, wall paper, stencils, dress fabrics, lace, embroidery, neckwear, umbrella handles, jewellery, brooches, silverware, knife, fork and spoon handles, belt buckles, hat pins, book covers, tail pieces, toys, souvenirs, trade marks and many others.

INDUSTRIAL CANADA hopes shortly to publish more details about this interesting matter.

The Chemical Industry in Canada.

AN interesting summary of the progress of chemical industry in Canada since the outbreak of war was presented by H. E. Howe, of Arthur D. Little, Limited, before the meeting of the American Chemical Society at Kansas City recently.

After noting some of the effects of the war upon chemical industry it was pointed out that several countries, heretofore not found in the list of those prominent in chemistry, had shown great activity, and foremost among these is Canada. The work confronting chemical industry in Canada, no less than in England, may be measured by the increased production of munitions since August, 1914. When it is remembered that British munition factories are now making more heavy gun ammunition every twenty-four hours than they produced during the entire first year of the war, some comprehension of the chemical and engineering problems, which have been overcome, can be had.

The production of acetone by an entirely new synthetic process is one of the recent Canadian achievements, as is also the production of metallic magnesium in bars and in powdered form for star shells. The activity in explosives involves new methods in the production of heavy chemicals. Potassium chlorate, bleach, caustic, cyanamide, abrasives, carbide, ferro-molybdenum and other alloys were referred to.

The steps being taken for the electrolytic refining of nickel were also described and some information given relative to the progress of pharmaceutical preparations in Canada.

The progress of the pulp and paper industry is remarkable, going forward at a pace indicating the possibility of Canada's leading in the world's production of pulp in the very near future.

The steps being taken by the Government, through an Advisory Council on Scientific and Industrial Research, to provide properly trained men for work upon scientific problems is another important factor. The Government has established a Forests Products Laboratory, while chemists now employed in industry looking forward to post-war conditions as well as being actively engaged with present problems.

To convey an idea of the possibilities for chemical industry in Canada, brief mention is made of the six great classes of resources to be found within the Dominion. These are: Agriculture, minerals, timber, hydro-electric power, furs and fish. The desirability and necessity of co-operation between Canada and the United States was pointed out, with emphasis upon the need of both reserve men and capital. Canada may be said to compare with the United States at the close of the Civil

War so far as construction is concerned, and the money required for future development must come largely from the United States, owing to the change in financial conditions brought about by the war. This financing of industries in Canada is nothing more than a form of reciprocity, since during the last century nearly $5,000,000 has been loaned to industrial America, principally by Great Britain.

Work of the Imperial War Conference.

The Secretary of State for the Colonies has issued a statement respecting the work done by the Imperial War Conference, which recently completed its work in London. The following are the resolutions passed as affecting trade and commerce:

"That the Imperial War Conference welcomes the proposed increase of the Board of Trade service of Trade Commissioners and its extension throughout the British Empire in accordance with the recommendations of the Dominions Royal Commission, and recommends that the Governments concerned should co-operate so as to make that service as useful as possible to the Empire as a whole, especially for the promotion of Inter-Imperial Trade."

"That the Imperial War Conference commends the proposals of the Board of Trade in the Memorandum on patents and trade marks to the careful consideration of the several constituent Governments of the Empire."

"That it is desirable to establish in London an Imperial Mineral Resources Bureau, upon which should be represented Great Britain, the Dominions, India, and other parts of the Empire.

"The Bureau should be charged with the duties of collection of information from the appropriate Departments of the Governments concerned, and other sources, regarding the mineral resources and the metal requirements of the Empire, and of advising from time to time what action, if any, may appear desirable to enable such resources to be developed and made available to meet the metal requirements of the Empire.

"That the Conference recommends that His Majesty's Government should, while having due regard to existing institutions, take immediate action for the purpose of establishing such a Bureau, and should as soon as possible submit a scheme for the consideration of the other Governments summoned to the Conference."

"That the present system of double income taxation within the Empire calls for review in relation—

(1) To firms in the United Kingdom doing business with the Overseas Dominions, India and the Colonies;

(2) To private individuals resident in the United Kingdom, who have capital invested elsewhere in the Empire, or who depend upon remittances from elsewhere within the Empire; and

(3) To its influence on the investment of capital in the United Kingdom, the Dominions and India, and to the effect of any change on the position of British capital invested abroad.

"The Conference, therefore, urges that this matter should be taken in hand immediately after the conclusion of the war, and that an amendment of the law should be made which will remedy the present unsatisfactory position."

"That the time has arrived when all possible encouragement should be given to the development of Imperial resources, and especially to making the Empire independent of other countries in respect of food supplies, raw materials and essential industries. With these objects in view this Conference expresses itself in favor of—

(1) The principle that each part of the Empire, having due regard to the interests of our Allies, shall give specially favorable treatment and facilities to the produce and manufactures of other parts of the Empire;

(2) Arrangements by which intending emigrants from the United Kingdom may be induced to settle in countries under the British flag."

Hours, Fatigue and Health.

HOURS, Fatigue and Health in British Munition Factories is the title of Bulletin 221, by the Bureau of Labor Statistics of the United States Department of Labor, as the first of a series of bulletins prepared at the instance of the Council of National Defence for the purpose of giving wide circulation to the experiences of Great Britain, France, Canada, and other countries in dealing with labor in the production of the largest quantity of munitions in the shortest space of time. The bulletin contains the reprint of eight memoranda published by the British Health of Munition Workers' Committee, which was appointed in September, 1915, "to consider and advise in questions of industrial fatigue, hours of labor, and other matters affecting the personal health and physical efficiency of workers in munition factories and workshops." These memoranda deal with Sunday labor, hours of work, output in relation to hours of work, industrial fatigue and its causes, sickness and injury, special industrial diseases, ventilation and lighting in munition factories and workshops, the effects of industrial conditions upon eyesight.

From a perusal of these memoranda it appears that Sunday labor, in the opinion of the committee, is not profitable and that continuous work "is a profound mistake" and does not lead to increased output; that a system of shifts, although impracticable in some cases, is to be preferred to overtime, since the latter taxes the strength of workers too severely, results in loss of time because of exhaustion and sickness, and curtails unduly the period of rest; that night work should be discouraged, that output cannot be maintained at the highest level for any considerable period if the conditions are such as to lead to excessive fatigue and to deterioration in the health of the worker, with a recommendation that hours should not exceed 56 per week for men engaged in very heavy labor, or 60 for men engaged in moderately heavy labor, while 64 should be a maximum.

The committee's study of industrial fatigue and its causes sums up its own studies of hours of labor, emphasizing the importance of regularity of hours and of daily and weekly rests made with due consideration of the character of the work performed. In its report on sickness and injury the committee points out certain injurious conditions which should be guarded against as likely to diminish seriously the efficiency of the labor force. "To

conserve energy and efficiency is, other things being equal, the way to improve output." The medical examination of all workers before employment is recommended, and it is suggested that factories should provide proper sanitary facilities, safeguard machinery, make arrangements for adequate medical and nurse schemes, etc. The value of first aid is emphasized.

The report on special industrial diseases gives the causes, methods of prevention and treatment for the principal industrial diseases which have been found to affect munition workers. Particular attention is directed to the importance of adequate lighting and ventilation, which are absolutely essential for the maintenance of health and comfort, and therefore the efficiency and capacity of the workers. Special measures to prevent undue strain upon eyesight and to reduce the liability of accidents to a minimum are recommended.

The committee calls attention to the added danger of industrial accidents: "Moreover, at the present time, the introduction of new labor, and of employees unaccustomed to the processes concerned, particularly in conjunction with the need for speed and pressure, overtime and night work with the consequent fatigue, must inevitably lead to greater risk of accident. The war has caused indirectly an enormous increase in the number, severity and cost of industrial accidents, especially during the year 1916.

"The principal reasons for the large increase of industrial accidents are as follows: (1) Employment of incompetent, unskilled and inefficient labor. (2) Increased pressure for larger output. (3) Disregard and non-enforcement of safety rules and regulations.

"During the past few months the accident rate has been somewhat reduced, because employees have become more accustomed to their work. However, many of our industrial workers will now enlist to fight for our country, and the services of many skilled workmen will be placed at the disposal of the War Department. To fill their places, new employees will have to be hired, who are unfamiliar with their jobs. In fact, women will probably fill the places of many of the men who are called for service. With these changed conditions there will be even greater necessity for safety measures to prevent accidents."

Causes of Death by Occupations.

BASED upon 94,269 deaths of male and 102,467 deaths of female industrial policyholders, 15 years of age and over, as recorded in 1911, 1912 and 1913, by the Metropolitan Life Insurance Company, tuberculosis caused the death of 20.5 per cent. of the former and 14.4 per cent. of the latter, while organic diseases of the heart were responsible for 12 per cent. of the deaths of males and 14.8 per cent. of the deaths of females. The average age of men dying from tuberculosis was 37.1 years and of women, 34.1 years. Of males the lowest average age at death, 31.1 years, was among those who died from typhoid fever, and of females the lowest average age at death, 29 years, was among those who died in childbirth. By occupation, the lowest average age at death was 36.5 years among bookkeepers and office assistants and the highest average age was 58.5 years among farmers and farm laborers.

These facts are brought out in tabular form in Bulletin 207 entitled "Causes of Death by Occupation," a study made by Louis I. Dublin and recently issued by the Bureau of Labor Statistics of the United States Department of Labor.

Tuberculosis was responsible for the largest number of deaths among clerks, bookkeepers and office assistants (35 per cent.); compositors and printers (34.1 per cent.); gas fitters and steam fitters (31.6 per cent.); longshoremen and stevedores (29.2 per cent.); teamsters, drivers and chauffeurs (28.2 per cent.); saloonkeepers and bartenders (26 per cent.); machinists (25 per cent.); cigar makers and tobacco workers (24.1 per cent); textile mill workers (22 per cent.); iron molders (21.9 per cent.); painters, paperhangers and varnishers (21.9 per cent.); masons and bricklayers (19 per cent.); bakers (18.8 per cent.); laborers (16.4 per cent.); blacksmiths (14 per cent.). Accidental violence was responsible for the largest number of deaths among railway enginemen and trainmen (42.3 per cent.); railway track and yard workers (20.8 per cent.); and coal miners (20.4 per cent.); while the largest number of farmers and farm laborers (16.4 per cent.) died from organic diseases of the heart, due to the facts that the prevalence of these diseases increases with age and that the average age at death of those in this group is higher than any other group.

Similarly, among women the largest number of housewives and housekeepers (15.2 per cent.) died from organic diseases of the heart for the same reasons stated above, while tuberculosis took the largest proportion of clerks, bookkeepers and office assistants (42.4 per cent.); clerks and saleswomen (38.7 per cent.); textile mill workers (35.5 per cent.); dressmakers and garment workers (27.8 per cent.); and domestic servants (15.9 per cent.). The average age of death was 26.1 years among clerks, bookkeepers and office assistants, and 53.3 years among housewives and housekeepers.

The statistics given in the bulletin indicate that respiratory diseases are prominent where the industrial worker is exposed to colds, drafts, and dampness (as among masons and bricklayers) or to violent changes of temperature (as among teamsters, drivers and chauffeurs). Organic diseases of the heart have a high proportional frequency in cases where the work is heavy and the cardiac powers are overtaxed (e. g., among iron molders). Suicide is frequent where depressing influences are present (as among bakers and cigar makers). Typhoid fever is high where questionable water supplies are used (as among enginemen and trainmen, farmers, iron molders and laborers).

WINNIPEG, THE 1917 CONVENTION CITY

COMMERCIAL METROPOLIS OF THE LAST GREAT WEST

By R. W. BROCK

THE City of Winnipeg, selected last year as the meeting place for the 1917 convention of the Canadian Manufacturers Association, is the greatest urban product of the Confederation era, and it is fitting that in this, the fiftieth year of the foundation of the Dominion, manufacturers should assemble within its borders for the consideration of those momentous matters thrust upon their attention by the serious developments of the day.

Members from the eastern industrial centres will travel to the convention city by various routes. Some will go all-rail, some by rail and water. But, however they may reach their destination, it will be rapidly, smoothly and in all the comfort that modern transportation arrangements can provide. The great cities of the east are only separated from the first great city of the west by a journey, the extent of which may be as readily calculated in hours as in days.

What a contrast to the conditions of a half-century ago! Then, to all intents and purposes, there was no Winnipeg in existence. The whole Red River Colony contained scarcely more inhabitants than the average-sized Ontario town. To reach the settlement required the undertaking of a journey arduous in the extreme — a journey consuming weeks, not days, and one attended with much discomfort, if not actual danger. And this only fifty years ago!



The Municipal Building, Winnipeg

To-day there are no less than three all-rail Canadian routes from the east to Winnipeg, while the traveller who prefers to interject a pleasant sail in his itinerary may do so by transferring from train to steamboat at Port McNicoll or Sarnia and resuming the train journey at Fort William. In the days of Confederation, however, there was no Canadian route at all to Winnipeg. The Canadian Pacific Railway had not been built. The nearest approach through Canada to the west was by rail to Collingwood, and thence by boat to Fort William. A brave man might have pressed on to Rainy Lake, but between it and Lake of the Woods lay a territory, vast, uncharted and unknown.

No, the only access to the Red River Valley, in 1867, was by the American route. This conveyed the daring traveller as far as St. Cloud, Minnesota, by rail. From there it was a case of travel by wagon over the hundreds of miles of prairie that stretched both north and south of the international border. Wagon trains made the journey twice each summer, and consumed some twenty days on the road, though a traveller might, if he possessed the means, buy his own outfit and proceed somewhat more rapidly to his destination. At all events, it was a trip that called for the exercise of much patient resignation and, in contrast to the speed with which the journey may now be performed, was equivalent in length to a modern journey to Australia or New Zealand.

So far as the development of Winnipeg, itself, is concerned, one scarcely needs to go back fifty years to establish an effective contrast. Even forty years ago there was very little to be seen in the way of building or settlement, where now the splendid new city spreads its great bulk over the land. A stone and mortar fort; a Hudson Bay trading post; a muddy prairie trail, leading out into the virgin wilderness—these marked the extent of development. The post was known as Fort Garry. Its walls were surmounted with cannon and there were loopholes for rifle fire, for in those days protection against the attacks of Indians was necessary. All told, there were but 215 people, men, women and children, in the place.

The production of the north-west at that time, apart from the scanty food supplies grown for local needs, was chiefly furs. These were collected during the winter months and despatched during the summer to St. Paul. Returning, the wagons brought in those supplies of clothing, etc., that the settlement could not provide for itself.

Only a few landmarks exist to-day to remind modern civilization of pioneer times. The old gate of Fort Garry is to be seen in the centre of a park in the commercial part of the city; Lower Fort Garry, situated on the Red River, 20 miles north of the city, kept in its original state, and now used at the Motor Country Club, and an occasional buffalo wallow appearing intermittently in the unsettled portions of the three prairie provinces, are the most outstanding.

Winnipeg, a city of 200,000 people, has arisen from the prairie as if by magic. And no more modern city than this first city of the Canadian West exists to-day. Its railway services, its hotel accommodation, its street railway system, its waterworks, its lighting, its well-paved and well-shaded streets, its extensive parks, its progressive business establishments, its newspapers, schools and colleges, its libraries and museums, its places of amusement—in short, all its civic equipment, is on a scale of the most generous proportions. To anyone, who has never visited Winnipeg, or who has not seen it for several years, the expansion in these particulars will prove little short of marvellous.

The three transcontinental railway systems of Canada all converge at and diverge from Winnipeg like the spokes of a mighty wheel. It has no rival in this regard. There are two



View along Main Street, from the Intersection of Portage Avenue

handsome and well-appointed depots, one serving the Canadian Pacific and the other the Canadian Northern and Grand Trunk Pacific Railways. All three roads have extensive freight terminals in and near the city—in fact that of the Canadian Pacific Railway has the reputation of being the largest railway yard in the world, owned and controlled by a single corporation.

The main business thoroughfares of the city, Main Street and Portage Avenue, are world-famous for their width and general air of spaciousness. Both are lined with fine large stores and financial institutions, while in the neighboring streets are located the great wholesale establishments, which supply a large portion of the needs of the Great West.

Winnipeg has become a noted educational centre. It is the home of the University of Manitoba, a growing institution, with which are federated six colleges. These were originally separate denominational bodies, a circumstance which has resulted in wide variations in the matter of location, but all are now united in one great central institution, which will eventually be situated on an extensive property alongside the Red River. The University also includes the Manitoba Agricultural College, situated at St. Vital, which is one of the best-appointed institutions of its kind in the world.

The public and high school systems of the city are well equipped, both as regards buildings and staffs. There are in operation 46 schools in all, of which two are splendid large technical schools. In the latter particular, Winnipeg has been taking the lead among Canadian cities for some years past. In addition to public schools, there are located in Winnipeg quite a number of private schools, both for girls and boys, not to mention colleges of music.

The city is well supplied with parks. There are in all thirty of them, and combined they cover an area of 674 acres. They are distributed throughout the city so as to be easily accessible and available to the different residential sections. The Red River and its tributary, the Assiniboine, flowing through the city, give opportunities for the beautification of both private and public grounds.

As a manufacturing centre, Winnipeg has been making rapid strides of late years, and it is now credited with ranking fourth among Canadian cities as an industrial centre. Undoubtedly the municipal electric power plant, owned and operated by the city, has played a prominent part in the development of Winnipeg as an industrial city. The plant is producing at the present time 40,000 h.p., and has available an additional 60,000 h.p. Electric energy is sold to manufacturers at the lowest possible price, with the result that upwards of 400 industrial plants are located in Winnipeg, providing employment for 20,000 hands.

But it is as a centre of the grain trade that Winnipeg is particularly famous. The fact that the railway terminals are unusually large has been already commented upon. This is owing to the fact that through Winnipeg passes most of the wheat and other grains raised each year on the prairies.



Wellington Crescent, in the Residential Section of the City

Winnipeg is the premier grain market of the world to-day, where actual trading in grain is transacted and the grain exchange is one of the sights of the city, which should on no account be missed. During the months of September, October, November and December, 1916, approximately 145,592,550 bushels of grain were handled in this market.

Along with the manufacturing and grain interests must be placed the wholesale and jobbing interests. These have grown to large proportion. Not only is record business done by mail-order houses direct to the farmers of the west, but a huge volume of business is transacted through the western retailers by wholesale establishments. The extent of the business is evidenced to a certain extent by the bank clearings, which in 1916 reached the unprecedented figure of $2,061,795,257, an increase of $425,000,000 over the highest previous record.

The production of the prairies to-day, in so far as the agricultural and other products of the farm are concerned, has for the past two years approximated a grand total of $500,000,000 per year, and all this has taken place in a decade less than half a century. When the history of the advancement of other countries is compared with the advancement made in this Western Dominion, the result is astounding. Winnipeg has made more progress in these few years than most places do in a century.

It is difficult to form any idea of just how prominent a place Winnipeg will occupy when the West has passed another half century. It is so closely identified with the development of the West's agricultural potentialities, that a true statement, of what one might naturally expect will be the conditions at that time, would hardly be credited by the public of to-day.

It is said that there is more land set aside for road allowances in the Provinces of Saskatchewan and Alberta than there is under cultivation. Statistics show that only 12 per cent. of the arable lands of Western Canada are at present being cultivated. If 12 per cent. is capable of producing an annual wealth of over $500,000,000, one might estimate what the grand total will be when 50 per cent. of the land is producing. The prosperity of the West must necessarily be reflected in Winnipeg.



Portage Avenue, the Great Retail Thoroughfare of Winnipeg

The Convention Hotel.

The Fort Garry Hotel, in which the convention will be held, is one of the most beautiful buildings in Canada. Its walls are of buff sandstone and they rise to a height of fourteen stories, while its copper roof and lofty pinnacles have a dull glow like gold when the sun strikes them. In its architectural treatment the structure is an adaptation from the period of François I, and recalls memories of the old French Chateaux in Normandy and Touraine.

The Fort Garry stands on an ideal hotel site, and it furnishes its patrons with magnificent views in every direction. One block to the east is the Union Station, and the hotel is also within easy reach of the shopping and general business district, although away from its noise. Assiniboine



Central Park, a Charming Retreat in the Heart of the City

Park, the Legislative Buildings, and St. Boniface, with its splendid Cathedral group, are in view from the windows and balconies, while in the distance two rivers can be seen winding gracefully away into the prairie lands.

From the Union Station a wide boulevard, with a double row of trees in the centre, leads to the hotel, and under the very shadow of the house is a small park which forms a picturesque setting for the ivy-clad ruins of the gateway to the old fort, built by the Hudson's Bay Company in the turbulent times which reigned nearly a century ago.



Fort Garry Gateway Park

The splendid new Fort Garry Hotel, headquarters of the convention, stands in the background, with Fort Garry Gate, all that is left of the old Hudson Bay trading post, in the foreground

The feeling on entering the rotunda of the hotel is one of quiet, home-like elegance. And this impression is retained by the visitor during the whole of his stay. The furnishings are rich, yet comfortable; heavy carpets partially cover grey marble floors and the aesthetic sense is appealed to throughout.

The combination of simplicity and dignity is well illustrated in the main dining room. This spacious chamber extends the whole depth of the building, and the prevailing colors are cream and gold.

The ball room is also especially pleasing in its quiet beauty. The foyer and loggia, which lead from the ball room to the banquet chamber, give the impression of an ancient cloister, being finished with vaulted ceilings and electric fixtures resembling lanterns belonging to the Middle Ages. The ladies' lounge is warm and inviting with its Flemish panelling.

The circular lounge room has been designed in Adams style. The café has a lovely marble wainscoting, while oak panelling is extensively used in the grill room.

The hotel has a total of three hundred bedrooms, two hundred and thirty-five connected with private bath, and sixty-five with running water and within easy access to the large bath rooms on each floor. The bedrooms are decorated in Louis XV style with carved walnut furnishings. A warmth is given to the delicately tinted walls and ceilings by the heavy carpets, which are of red, blue or green shade, in harmony with the prevailing color scheme for that floor. Considerable study has been given to the size and shape of the rooms, their inter-communication, access to elevators, and constant supervision by the proper person over every room.

On each floor is a fully equipped service kitchen for the preparation of meals when they are desired to be served in private rooms.

In short, the Fort Garry is one of the great hotels of this or any other continent. Every modern appliance has been used in making the house perfect from a mechanical standpoint, and in this regard, and also in the matter of service, it confidently challenges comparison with any of the famous hotels of America or Europe.



A View in Assiniboine Park

This is the largest of Winnipeg's natural recreation grounds, covering an area of 284 acres, and with much beautiful and diversified scenery

DEATH OF WELL-KNOWN MANUFACTURERS.

The death occurred in Toronto, on May 18, of Alfred Ruggles Williams, president of the A. R. Williams Machinery Co., Limited.

William Milner, of West Lorne, Ont., one of the pioneer wagon manufacturers of Western Ontario, died on May 15, aged 79 years. He was a native of Cumberland, England, but came to Canada with his parents when 13 years of age, settling in London. There he served an apprenticeship in the wagon-making trade. He then went to Strathroy, where he engaged in manufacturing for some years. Later he established the Chatham Wagon Co. in Chatham; the Milner-Walker Wagon Works in Walkerville, and the Milner Petrolea Wagon Works in Petrolea. Altogether, it is said that the late Mr. Milner built 100,000 wagons during his lifetime. He resided in West Lorne from 1904 until his death.

In the death of George McQuay, Sr., president of the McQuay Tanning Co., Limited, which occurred at Owen Sound on May 5th, Canada has lost one of its worthiest business men. The late Mr. McQuay was born on a farm near Smith's Falls, and learnt the tanner's trade in the town of Perth. He followed the same trade for various periods in Woburn, Mass.; Bos-

ton; Oshawa; Fergus; Stouffville; Stayner and Newmarket, latterly as a foreman tanner. Thirty years ago Mr. McQuay settled in Owen Sound and established the business which bears his name. From a small beginning the industry expanded until to-day its product is known throughout Canada. The firm bears a high reputation, due largely to the solid qualities of its founder.

MINERALOGICAL EXHIBIT.

Arrangements being made for a Display of Economic Minerals and their Products at Ottawa.

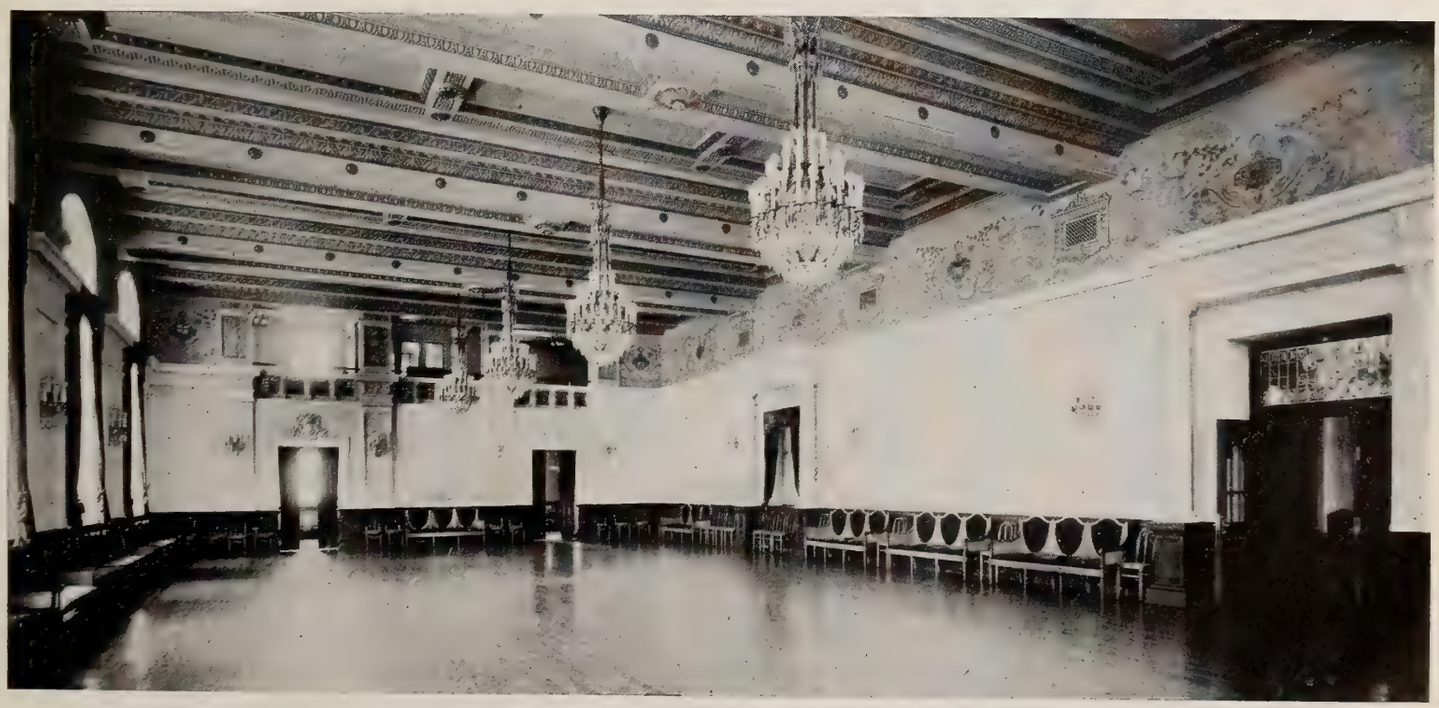
Arrangements are being completed, with a view to the maintenance in Ottawa during the occupation of the Victoria Memorial Museum by the Dominion Senate and House of Commons, of an exhibit of Canadian economic mineralogy. The exhibit will be carried on under the auspices of the Department of Mines. The mineral collections assembled by the Geological Survey during the last seventy years or more will be drawn upon to form the nucleus of the exhibit. It will also embrace, not only Canadian economic ores and minerals, but commercial products derived from them as well. In some cases there will be facilities for comparing Canadian raw ores and minerals with similar materials of foreign origin. It is the intention to maintain the exhibit as a bureau of information for the benefit of the public generally, and it is confidently believed that, within the scope of its activities, it will be of great public service, more especially at a time when, with the assurance of a satisfactory ending to the European war, there is every likelihood of a speedy resumption of the development of Canada's natural resources.



The Lofty Ball Room Foyer, Fort Garry Hotel, the Convention Headquarters

TO PRODUCE FILTER PAPER.

The Bureau of Standards has interested several American manufacturers in the problem of making filter papers of a suitable quality to replace those hitherto imported from abroad. Such papers are used in all chemical laboratories and in large quantities in industrial work for filtering out fine suspended particles from a liquid. They must have a very low percentage of ash and a rapid rate of filtering, and must be free from certain constituents. The chemical treatment after the manufacture of the paper itself is especially important, and the Bureau has been experimenting upon this phase of the question.—*Scientific American.*



Beautiful Ball Room of the Fort Garry Hotel, in which the C.M.A. Convention will be held

RAPID TRANSIT IN THE FACTORY

The Contribution of the Conveyor Belt to Modern Industrial Efficiency

(Article and Illustrations by Courtesy of "The Scientific American")

NOW and again it is desirable to pause in the round of chronicling new and ingenious devices as they come along, and to ask ourselves just where the general stream of progress is taking us. When we thus formulate into a definite body what have been mere stray items of information, we are as likely as not to find that a mild sort of revolution in our way of doing some particular thing has come about right under our unsuspecting noses.

Such a revolution overtook the business of long distance transportation many years ago. The process was repeated in the slow but steady advance of the motor truck to dominance in the field of delivery. And now we find that in the domain of indoor handling of goods we are squarely in the middle of another upheaval.

But a few years ago such work was invariably done by hand. A small army of boys was employed about our factories, hauling trucks or packing material about by hand. Today all this is changed. The instrument which has wrought the transformation is the conveyor belt. Its flexibility, its variety of form, are amazing. Few indeed are the men who can hope to tell the belt engineer, "Oh, yes; but *my* business is different." We show here a few typical installations, but it must be understood that they are merely typical—that they are not in any degree exhaustive of the possibilities.



Using space from the ceiling down by aid of a portable conveyor belt

Some months ago we described a comprehensive conveyor system in use by the Post Office Department at Grand Central Terminal, New York. We pointed out the great economy of time and labor in the external handling of mail from the trains to the post office on the upper floors of the Terminal building and back to the trains again. Another angle of efficiency is demonstrated by the recent installation of conveyors in the Ferry Station Post Office, San Francisco. Here the emphasis has been on internal handling.

The geography of San Francisco necessitates ferriage across the bay of nearly all mail, outgoing and incoming. This means that fully 80 per cent. of the mail handled at San Francisco enters the Ferry Station Post Office. It flows in a steady stream, and any system to handle it must work continuously and expeditiously. When an overland mail delivers a thousand sacks, these must be quickly opened and got out of the way without causing congestion.

Incoming mail is delivered at the north-east corner of the post office building. It is unloaded on to the conveyors, of which a number are provided, for different classes of mail matter. For the most part these conveyors are belts with steel chutes and slides so arranged that sacks or even single parcels may be diverted at desired points. With almost human intelligence the different classes of mail are shunted from one line or belt to another, at the will of the operator in charge. These conveyors bring the mail directly to opening tables. Here the sacks are opened and worked into their different directions and divisions. The service of conveyors relieves the clerks of all thought and labor in procuring the sacks from the trucks; they flow in continuous streams to the tables. Special equipment for parcels post matter is provided, and the bulky packages and heavy sacks of this division are handled with great ease. There are four long lines of parcels post conveyors. All packages are carried directly to the opening table. The clerks stand on the floor between this table and the conveyors radiating from the far end, distributing the parcels post matter on to the conveyor which will take each particular package to the rack of sacks destined for the appropriate section of the country. The arrangement of these conveyors is most compact; the radiating plan, never before used in such systems, gives separations in very little space, and at the same time allows plenty of room for the racks of sacks at the other end—a feature of importance. So much for incoming mail. The outgoing mail collected from street boxes is brought to another side of the building, and the sacks carried on a conveyor to a mezzanine floor. Here they are opened and various classes of mail distributed by hand into different chutes which take them directly to cancelling machines and distributing racks. A system of overhead belts carries this mail back and forth till it has been cancelled, sacked, and is ready for delivery to the outside of the building, where trucks are waiting to take it to the ferries.

The mail taken into the public lobby of the post office falls from the drops directly on to an inclined belt elevator, always running, which carries a single letter or a bundle, as the case may be, up to the horizontal belts overhead, where it merges with the mail from the carriers' collections, and

passes with that to cancelling machines or facing tables. The old method was to put a basket under the drop, pushing it across the floor to the tables when it was filled. The conveyor provides a continuous movement of mail, avoiding congestion at busy hours and moments. A similar disposition is made of packages handed in at the window of the parcels post division.

The building at Ferry Station was especially designed for the use of this conveyor system. The actual number of men saved by the installation is problematical, for business has greatly increased since the conveyors were completed. Perhaps the greatest consideration in the minds of the officials who fostered the installation was the continuity of service which the system affords, and the further elimination as far as possible of the human element in the handling of mail. The old delays in waiting for trucks, for baskets to be removed, for men to return to their posts, have been entirely eliminated. The great gain in floor space alone is regarded by the authorities as ample excuse for the conveyor. And of course results are typical of those attained by use of conveyors in all lines.

We have just remarked that the San Francisco Post Office was constructed with special reference to the installation of conveyor belts. This is really a noteworthy feature of the conveyor system; it is a fact that many, if not most, conveyor installations are made in new or remodelled buildings, and that frequently the saving to be effected by them is a potent factor in clinching the decision to rebuild. But rebuilding, or even reconstruction, is not always a prerequisite to their use. A prominent packing house recently concluded that its procedure of manufacturing its packing cases in one building, loading them on to a two-horse-truck, and carting them around two blocks from the back door of the box factory to the back door of the packing room, was a wasteful business. It was not possible to move the box factory to a more convenient spot; but the problem of doing away with this antiquated routing was nevertheless solved, in the manner indicated in our cut.

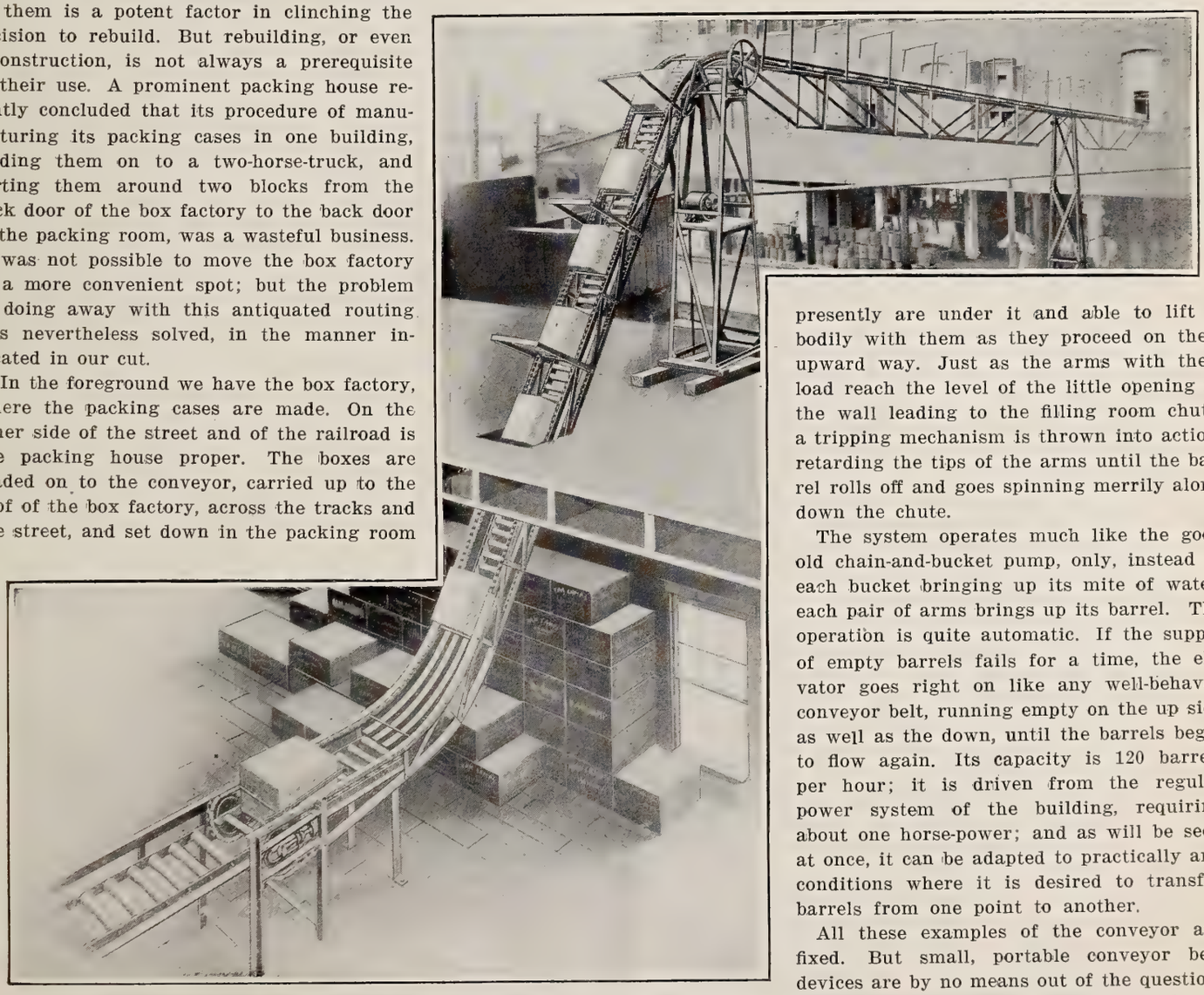
In the foreground we have the box factory, where the packing cases are made. On the other side of the street and of the railroad is the packing house proper. The boxes are loaded on to the conveyor, carried up to the roof of the box factory, across the tracks and the street, and set down in the packing room at precisely the spot where they are wanted. Not only that, but most of the work is done by gravity. A one-horse-power motor is necessary to raise the boxes to the highest point of the system, at the top of the stand above the roof of the box factory; but from here they just drift along. They are carried to a sufficient height in the first place so that their weight does the rest, and brings them, in a steady stream, to the packing tables. In accordance with this plan, it will be seen that the endless chain-belt, which is used to raise the boxes to the top of the little tower, stops there and returns, so that for the rest of their journey the boxes simply roll along over fixed rollers.

Another valuable and ingenious installation is one recently made by a large oil works in Milwaukee for handling empty barrels from the wash-house to the filling room. The barrels after washing are rolled into a chute, which delivers them at the foot of a conveyor-elevator, as indicated in the picture. They are then raised through a distance of several yards and thrown out into a second chute, down which they gravitate to their destination.

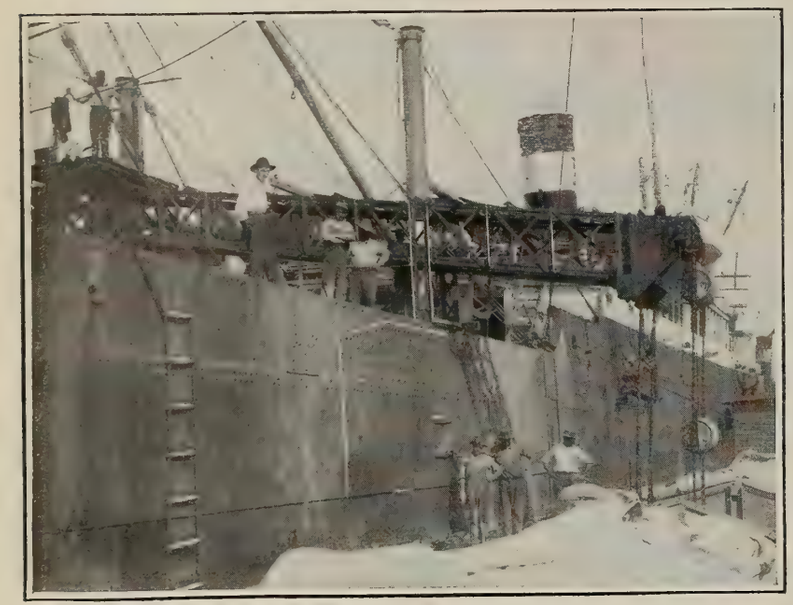
The distinctive feature of this elevator is the curved metallic arms attached to the rotating belt. These are so constructed that as the belt carries them down into the mouth of the chute they catch hold of the barrel waiting there, and, rolling it around the curved head of the chute, presently are under it and able to lift it bodily with them as they proceed on their upward way. Just as the arms with their load reach the level of the little opening in the wall leading to the filling room chute, a tripping mechanism is thrown into action, retarding the tips of the arms until the barrel rolls off and goes spinning merrily along down the chute.

The system operates much like the good old chain-and-bucket pump, only, instead of each bucket bringing up its mite of water, each pair of arms brings up its barrel. The operation is quite automatic. If the supply of empty barrels fails for a time, the elevator goes right on like any well-behaved conveyor belt, running empty on the up side as well as the down, until the barrels begin to flow again. Its capacity is 120 barrels per hour; it is driven from the regular power system of the building, requiring about one horse-power; and as will be seen at once, it can be adapted to practically any conditions where it is desired to transfer barrels from one point to another.

All these examples of the conveyor are fixed. But small, portable conveyor belt devices are by no means out of the question. One type is that used in the piling of boxes and boxed goods.



Conveying cases from the box factory across the street and over the railroad to the packing house

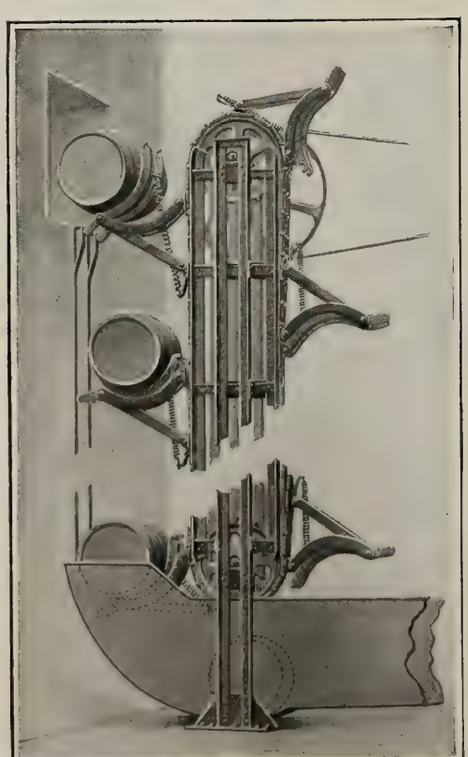


Unloading barrels of cement by conveyors

The average factory or warehouse stores material or finished product from the floor up. A number of them, however, are learning to use the space from the ceiling down without paying any more rent. The portable piling machine recently developed to make this possible is of conveyor belt type. It consists of a steel channel frame to carry the moving belt, the whole being mounted on a portable truck with broad-tread casters. The incline of the frame is adjustable, somewhat upon the plan of the barber's chair. It may be raised or lowered to accommodate a pile of any height. It begins from the lower levels and piles the material to any altitude desired. The extreme height is determined by the conditions prevailing, and the machine designed accordingly.

To pull the machine from place to place in the warehouse requires no more labor than moving an ordinary truck. Trail wire to a motor is provided, with starting and stopping arrangements incorporated on the truck itself. Cleats on the belt serve to hold the load firmly upon the moving conveyor; and a section of rollers on an angle iron frame at the top provides a waiting table for the package while the man at the top is adjusting it to position. Another man to load the bundles on the belt completes the labor required. Progressive managers are realizing that space at the top is just as valuable as that on the floor, and are employing modern appliances to make it available.

A more ambitious type of portable conveyor is used for the unloading of vessels directly into barges or cars at a single operation and without hand labor. The Colon installation, which we illustrate, is designed primarily to handle barrels and sacks of cement, but it can easily be modified to meet a very wide range of demands. The conveyor machines are a part of the ship, and travel with it. When rigged in place for unloading, they afford a continuous movement from the darkest corners of the hold to the barges moored alongside. The electric control is exactly like the control lever and box of the motorman on a street car. It is located at a convenient vantage point on the bridge of the vessel, and from this point the machine may be started, stopped or reversed instantaneously. As each cradle on the endless chain deposits its load, consisting of a single barrel or a pile of sacks, it automatically returns to the hold, with the belt, for another load. A few men in the hold to bring the pieces to these conveyors, and in the barge to move them away from where they are deposited, constitute all the human labor necessary.



The barrel hoist in operation, showing how it picks up and delivers its load

A similar installation is to be found at New Orleans, where it is used for the loading and unloading of bananas. That each conveyor installation presents a problem with its own special and unique features is to be seen by comparison between these two. At Colon, in order that the same ship might unload indifferently at many points, it was necessary to place the conveyor unloaders aboard the vessels. In use the extended end rests upon the dock; hence it was necessary to provide means for securing the balance to compensate for the natural pitching of the ship when tied to the dock. At New Orleans, where many ships were to unload at the same spot, the machine was located on the docks, with only the light movable end on the ship; and this problem was not nearly so serious. Here, however, the outstanding difficulty was the development of a device that would carry the bananas without breaking the bunches. This was accomplished by fastening the leather belt to its steel carrying frame at intervals only, leaving a slack between these fixed points to sag down into a pocket of just the right size to carry a bunch of bananas neatly and safely.

A NEW CELLULOID CEMENT.

A Swiss contemporary publishes a very interesting account of a new and valuable celluloid cement for gluing leather splits together, so as to form solid slabs or plates of leather. As is well known celluloid solutions possess the drawback of being much too sticky. If a celluloid solution be prepared in acetone or other solvent, it is impossible to obtain a substance of sufficient liquidity, with more than 16 to 18 parts by weight per 100 parts of acetone; if the proportion of celluloid be increased the resulting liquid will not penetrate between the fibres of the material and the parts will not adhere.

In order to secure a highly liquid solution, containing a greater percentage of celluloid, the following process must be observed. Chemically or technically pure acetone (100 parts) celluloid (20 to 30 parts, and oxalic aicd (not more than 2 parts), and oxalic acid (not more than 2 After hermetically closing the receptacle, the ingredients therein are thoroughly mixed, by suitable stirring gear, at a normal temperature; this is continued, either incessantly or at intervals, for a period of 12 to 14 hours. This adhesive must correspond to the absorptive capacity of the material. If too thin it must be suitably thickened; pressure can also be used to force it into the material if necessary.—*Scientific American.*

INDUSTRIAL PREPAREDNESS IS COUNSELLED

Montreal Manufacturers at the Annual Meeting of the Local Branch Hear Several Excellent Addresses

By W. P. HUGHES

Acting Secretary, Montreal Branch, Canadian Manufacturers Association

INDUSTRIAL preparedness for the Great Industrial War to follow the declaration of peace, was the counsel given to the members of the Montreal branch of the Canadian Manufacturers Association by the retiring Chairman, Geo. A. Slater, at their seventeenth annual meeting, held in the Ritz-Carlton Hotel, Montreal, on May 16th. An unusually large number of members were present, and the keynote of the whole meeting was the "Industrial Preparedness" of which Mr. Slater spoke.

The reports of the various standing committees and of the secretary were received with much satisfaction. In general they told of constant vigilance and energetic action on behalf of the branch in the various lines of Association activity.

In spite of prevailing unfavorable conditions, a net increase of one in the membership of the branch was reported, the total standing at 581. Twenty applications had been received and approved for membership and nineteen resignations had been accepted.

The Nomination Committee reported as follows:—

Wm. Rutherford was unanimously elected Chairman, and C. Howard Smith, Vice-Chairman, with the following Executive Committee: Capt. J. H. A. Acer, G. F. Benson, B. W. Coghlin, G. H. Duggan, Art. Harris, Michael Hirsch, Walter Jamieson, R. H. McMaster, H. E. Moles, S. J. B. Rolland, Lt.-Col. W. J. Sadler, Eugene Tarte, John Lowe, F. W. Stewart.

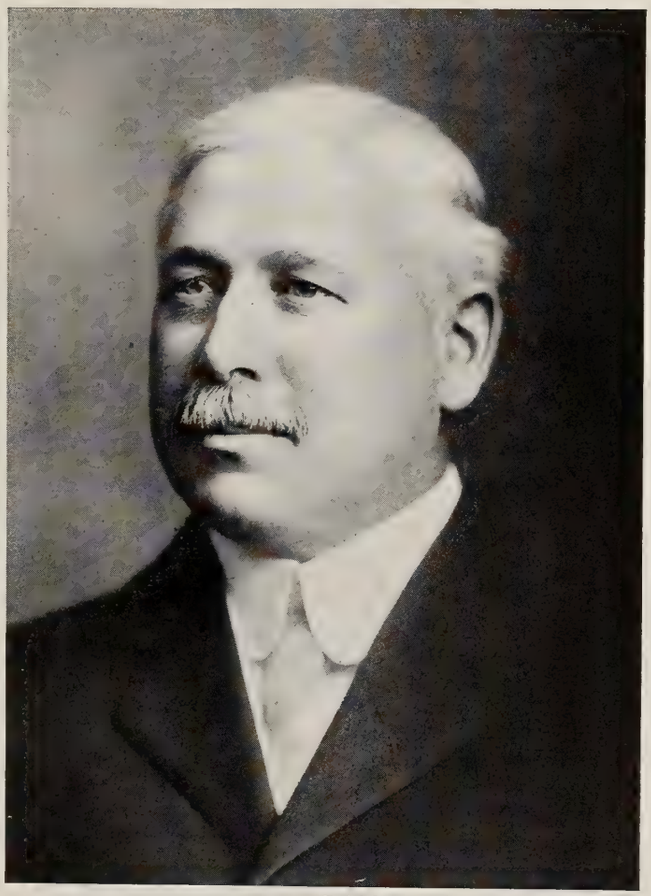
Under the head of new business the redraft of the branch by-laws, which had been prepared by a special committee, under T. P. Howard, was unanimously approved.

In his valedictory address, Mr. Slater reviewed, in a concise but comprehensive manner, some of the peculiar problems which the Association has faced, and is facing, owing to the war. He pointed out that the year of his chairmanship had been one in which Canada had been most severely tested; that it was a period when her reserve power had been called upon; that the strain of war activity was beginning to tell in her commercial and industrial life; that many changes in the scope and method of industry had been the necessary outcome of this upheaval. On the whole, he maintained, that the manufacturers of Canada had happily adapted themselves to these new conditions, but that to meet further and even more radical changes immediately following declaration of peace, Canadian manufacturers must be prepared. Canada's place in the probable Empire trade preference scheme would largely be determined by this preparedness on the part of her manufacturers.

He urged that what was to be done to safeguard Canada's interest must be done quickly and with large foresight. It needed co-operation and team work if this common opportunity was to be realized. Through active interest, personal sacrifice and united effort on the part of the Association members, Mr. Slater maintained, the solution to this problem of preparedness lay. It was in the interest which the members took in the Association, not in its numerical strength, that the hope of the Association lay. A manufacturer who only paid dues to his Association was only so many dollars better than he who was not a member. To realize what the Association stands for and what the Association may accomplish through its members, personal loyalty and devotion on the part of those members, is essential.

Mr. Slater spoke of those outside the membership who took the stand that they got its benefits without paying for them. Leaving out of consideration the selfishness of this stand, he clearly pointed out the erroneousness of it, showing that although such a man might enjoy the Association's general helpfulness in the matter of securing business-like legislation and favorable manufacturing conditions, he did not receive material individual help which the members enjoy through the work of the Association's experts, nor did they have a voice in determining the policies of this powerful co-operative body, which, it was claimed, was appreciated by, and received the respectful attention of both Federal and Provincial parliamentarians. To see to it that such a man knew and realized these things was at once the privilege and duty of the Association members.

On taking office, the new chairman, William Rutherford, discussed the proposed system of taxation of war profits, which he considered should be adjusted so as to bear equitably



British and Colonial Press photo.

WM. RUTHERFORD

Elected Chairman, Montreal Branch of the Canadian Manufacturers Association on May 16, 1917.

Mr. Rutherford is secretary-treasurer of William Rutherford & Sons, Limited, general lumber merchants and box manufacturers, Montreal. He is a native of the Canadian metropolis, and began his business career with the Phœnix Insurance Co. Later he was associated with the Pillow-Hersey Mfg. Co. In 1898 he joined his father in the lumber business. He has served as mayor of Westmount; chairman of the Westmount School Commission; vice-president, Montreal Technical School, and President of the Montreal Mechanics Institute.

upon all monied interests rather than a selected few, whose money would ensure Canada's industrial development.

With regard to the war, the new chairman said that recruiting had evidently reached such a low point throughout the Dominion that some form of compulsory service was necessary if those men who should go were to be sent and those needed here were to be kept at home.

Following the business meeting, an informal dinner was held in the ball-room. Wm. Rutherford presided, and with him at the head table were G. F. Benson, Geo. A. Slater, Prof. Barnes, Michael Hirsch, S. R. Parsons, vice-president of the C.M.A.; G. M. Murray, general secretary; J. E. Walsh, transportation manager; J. H. Sherrard, and others.

Mr. Parsons, in his address, opposed any tariff changes that would make the manufacturers' work more difficult, at the behest of disgruntled farmers in the West.

He also stated that it had been decided to increase the membership fees, which would be dealt with at the June Winnipeg convention.

Mr. Parsons then dealt exhaustively with the railway situation, as outlined in recent reports. He urged that the C.M.A. take a decided stand, and his opinion was that since the country had to pay, it should take over the railways in some equitable manner, and thus get some return for the money, while securing a chance for economy. He disagreed with the Drayton report idea of leaving the C.P.R. alone because it was financially sound, declaring that the country, if it undertook the matter at all, should take the bitter with the sweet.

Mr. Murray, secretary of the Association, dealt at length with the details of the Company Laws, pointing out the difficulty of dealing with conflicting provincial and Dominon legislation. From this he dealt with proposed work in connection with insurance legislation and the business profits taxation. With regard to this he said that the farmer who increased his production and made big profits was lauded as a hero, while the manufacturer who got busy and made money was denounced as a war profiteer and taxed accordingly.

Brief addresses were given by Howard Smith and J. E. Walsh, after which the meeting closed with an address on the development of submarines by Prof. Howard T. Barnes.

A SURVEY OF WESTERN CONDITIONS

Comprehensive Review of the West's Problems by the Retiring President of the Winnipeg Board of Trade

By A. L. CROSSIN

WESTERN CANADA has enjoyed a reasonable share of what has come to be known as war prosperity, which has arisen in our case from the high price of food products rather than from any considerable degree of manufacturing for war purposes. The high prices of all kinds of grains and live stock ensure the prosperity of the farmer. Much of the proceeds of the record crop of the year 1915 was absorbed in the payment of the farmer's obligations accruing out of previous less satisfactory crops. Last year's crop meant spending money for the farmer. Thousands of farmers are now enjoying financial independence. Their mortgage and other indebtedness has been substantially reduced and their obligations are well in hand. All classes of trade have been stimulated. Collections are uniformly good. Jobbers are only limited in their shipments by the scarcity of goods to supply orders. Old stocks have been disposed of to advantage. Within well defined limits prosperity is general. Central and southern Manitoba and south-eastern Saskatchewan unhappily do not share in this good fortune, owing to the almost complete failure of the grain crop from heat and rust.

The Real Estate Situation.

Dealers in farm lands must necessarily find sales rather slow. Immigration has been negligible. Labor is scarce and dear. Farmers have ceased to regard the purchase of additional land as good speculation and are not disposed to add to their present holdings. Mortgage companies and embarrassed farmers do not readily secure purchasers. For these reasons the anomaly is observed of prosperous agriculture and a rather depressed farm lands market. There is a more healthy sentiment than was observable a year ago in our cities and towns, whose vacant dwelling houses are slowly filling up. The municipal systems of these communities were designed to provide for a growing population. The overhead expenses still press heavily upon the communities whose population has been depleted through enlistments and the loss of mechanics connected with the building trades. It is gratifying to know that recovery from speculative disorders is proceeding satisfactorily.

Despite the high prices for all products of the farm, it must be recognized that the farmer is working under some serious handicaps. Thousands of young men have gone off the farms to join the colors. Labor is scarce, dear and frequently inefficient. The grain production for the season 1916 under these disabilities and the rather unfavorable ripening season is a tribute to the quality of our soil and the general excellence of our farming. The latest estimate of the crop of 1916 is as follows: Wheat, 210,300,000 bus.; oats, 282,987,000 bus.; barley, 42,530,000 bus.; flax, 6,430,000 bus.

During the past year, through the co-operation of the Dominion Government and our banks, a movement of the utmost value to our live stock industry has been inaugurated. The stock yards have become a clearing house for the return of stockers and feeders to our Western farms. Over 29,000 stockers and feeders returned West from Winnipeg last year, as against about 9,000 in 1915.

That the farmers of Manitoba are maintaining their stocks and laying the foundation for a profitable industry in the future will appear from statistics supplied by the Department of Agriculture of this province, showing a 30 per cent. increase in total live stock (horses, cattle, sheep, swine) from 1913 to 1916.

Committee of Commerce and Agriculture.

The growing realization of the interdependence of the city and the farm led to the formation in the spring of 1916 of a joint committee of commerce and agriculture, composed of representatives of the farming, commercial and financial interests of the three prairie provinces. These men soon found that their common interests were much greater than their separate interests, that the prosperity of one section of the community reacted on all and that co-operation was the only valid policy for sane citizens. These gatherings have resulted in the removal of misunderstanding, the growth of mutual respect and esteem and the co-operation which is already making for greater efficiency in all departments of business life. Bankers and money-lenders are getting the farmers' point of view. Country storekeepers are recognizing the need

of reform in their credit system. Farmers are receiving more enlightened financial aid for live stock production. Of supreme importance is the conviction that interminable meddling by legislatures in the laws of the land will not better mutual relations between debtors and creditors or buyers and sellers.

West's Manufacturing Outlook.

Even a superficial acquaintance with the tactics of war teaches us that one wing of an army cannot safely advance at a greater rate of speed than the remainder of the line. Analogously, the commercial progress of a community must be symmetrical. To assure stability of income to the city and the greater certainty of employment to her citizens, the importance of constant attention to the development of our manufacturing industries cannot be overestimated. The conversion of raw material into the finished product, the utilization of waste, the springing up of industries growing out of the by-product of other processes form some of the most interesting and economically healthful features of the national growth. It is a satisfaction to observe the steady growth of the manufacturing industries of Winnipeg. The courage and adaptability of our manufacturers augurs well for the future prosperity of this city. The latest available trustworthy figures, those of the Bureau of Labor, show 396 factories operating in the City of Winnipeg, employing over 15,000 persons. It is significant that many of these plants are as yet in but a small way of business. Their potentialities are great, as the value of the output for last year, estimated at $50,000,000, indicates. Through the courage and foresight of our civic leaders, the City of Winnipeg has provided itself with a hydro-electric power plant which is able to supply power at a price which few places can offer. One cannot but speculate on the apparent suitability of Winnipeg for the manufacture of rolling stock for our Western railways, automobiles, the tanning and manufacture of leather, canning of vegetables and small fruits, to say nothing of industries which would grow out of a scientific research in connection with our natural resources.

Canada's Peace Problems.

Statistics of imports and exports, of bank clearings, of railroad earnings, all disclose improved financial conditions throughout Canada during the past year and continuing on into the present year. To the heavy carry-over of the previous year's grain crop may be attributed part of this gratifying showing. War orders and high prices of food products have contributed, as has already been pointed out. Closer attention to economic laws and saner financial methods have played their part in this improvement. It cannot be doubted that many whose income and expenditure did not balance two or three years ago have now brought these accounts into agreement. Collections are more satisfactory than at any time since the outbreak of war. On the other hand, bankers and lending companies find little demand for money, and interest would tend to lower rates were it not for the stupid disabilities imposed by our legislatures on lenders. Only the most urgent new constructive work is being undertaken and, if for no other reason, the paramount duty of devoting all our resources to the prosecution of the war requires the postponement of all but absolutely unavoidable capital outlay.

During the past eighteen months the Canadian Government has issued domestic war loans aggregating three hundred and fifty million dollars, which issues have been oversubscribed to the extent of two hundred million dollars. This splendid result is a tribute to the inherent soundness of Canada's financial position. It is also significant of a notable change in the investment habits of the people. Western Canada, quite unaccustomed to this form of investment, subscribed no inconsiderable proportion of this sum. The change in our investment habits is a wholesome one, tending to create a useful reserve of financial strength.

With the return of peace will come industrial disturbances. Capital and labor will be suddenly displaced, with attendant commercial uncertainty and much unemployment. Manufacturers and traders will find themselves with unsold stocks facing a falling market. New and heavier forms of taxation must be assumed. The practice of thrift and the development of a higher degree of financial, industrial and commercial efficiency will be forced upon us. Situated as we are on the fertile prairies of Canada, with markets for our products ready to hand, populated by a virile and resourceful people, we are happily conditioned to engage even untoward circumstances. To achieve success the first essential is co-operation, and this spirit is much in evidence at present. There is a national indifference to waste which must be overcome. Our fire losses, our legislative experiments and incongruities, our transportation follies, all represent loss of effort which this country cannot continue long to bear. Our mines, fisheries and forests are foolishly regarded as inexhaustible, and even the taxpayer is woefully ignorant of their potentialities or their proper administration by the nation. A lively personal interest in our national and municipal politics is one of the requisites of our successfully meeting the new problems.

West's Transportation Needs.

One of the most insistent questions before the Canadian people is that of transportation. The building of competitive lines with public money or public credit has failed to fulfil the promise of the promoters of these roads that rates would be reduced. On the contrary, the unnecessary duplication of many lines for which adequate traffic cannot be found has resulted in serious deficits and financial embarrassments for the roads involved. The people of Canada have too large a stake in these enterprises to permit of their becoming bankrupt. No part of Canada is more vitally interested in the solution of our transportation problem than the prairie provinces. Several alternative plans are now before the people of Canada. One cannot venture a useful, because inexpert, opinion on the different policies proposed. While theoretically a good case can be made for the nationalization of railroads, the experience we have had of the political management of public utilities is far from encouraging.

If this brief review has to a less degree than has been customary in the addresses of my predecessors drawn attention to the accomplished results of the past year and has ventured to suggest some of the possible weaknesses in trade conditions or our economic situation the excuse, if needed, may be found in the certainty of the well nigh staggering cost to Canada of participation in the war. The Finance Minister warns us that our present commitments will bring the national debt to $1,300,000,000, and no one anticipates that this is the end of the account. A debt of $2,000,000,000 may have to be faced. To the interest and sinking fund charges on this obligation may be added a correspondingly large pension fund, and this liability must be assumed by a people, thousands of whose most splendid young men have been left on the fields of Flanders and France or have returned, disabled, to become a sacred charge upon a grateful country. These provinces are peopled by a virile, courageous and resourceful race which still exhibits the spirit of the pioneer and will not be dismayed by difficulties, however portentious. Recognition of the size of the job to be done leads men of such character to put their backs into it. Happily, Providence has entrusted us with a food-producing country of extraordinary fertility and, with hearty and intelligent co-operation, the people of these Western plains may make them the home of millions of the most prosperous and contented people in the world.

A YEAR OF ACTIVITY AND PROGRESS

The Toronto Branch Reviews its Work for the Past Twelve Months and Lays Plans for the Coming Year

By H. MACDONALD

Acting Secretary, Toronto Branch, Canadian Manufacturers Association

A LARGE attendance of members was recorded at the seventeenth annual meeting of the Toronto branch of the Canadian Manufacturers Association, held in the spacious dining hall of the Central Technical School Building, on May 17th. Prominent among the matters receiving the Association's support were Technical Education and the imperative need for its extension; Industrial Research and post-bellum preparedness on more scientific lines. The members present displayed a keen and active interest in the discussion on these subjects.

Thomas Roden, retiring chairman of the branch, who presided, delivered an excellent address on the achievements during the past year. He stated that: "With Canada approaching one of the most critical periods in her existence, caused by the necessity of readjusting her production from a war to a peace basis, it is imperative upon us, as business men, to bring our united counsels to bear in an effort to anticipate these problems. The sphere of influence and activities of our Association have been so extensive, embracing such great diversifications of interest, yet providing a common ground upon which divergent views may be harmonized, that its deliverances must necessarily take upon themselves an atmosphere of broad and comprehensive statesmanship. This general view has actuated strongly the deliberations of the Committee of Toronto branch, and during the year I have had abundant evidence of the respect and esteem in which our Association is held.

"Canadian fiscal year showed the trade of Canada to have been nearly twice that of 1914-15. The ordinary revenue of the Dominion amounted to about $230,000,000, or $100,000,000 more than that of 1914-15. The revenue of the past year,—the largest in our history,—will be sufficient to meet all the ordinary capital expenditures of the country, and in addition pay fifty or sixty millions of the expenditures for war purposes. The total trade of the Dominion will be found to have reached about two billion dollars, or about a billion dollars more than that of the fiscal year in which the war began.

"At the allied conference in Paris," he went on, "certain resolutions were adopted looking to the formation, after the war, of a sort of commercial union of the anti-German powers. It is, of course, too soon to presage the nature of the effect, but it is not too soon for all who are engaged in commercial and industrial pursuits to become continuously watchful observers.

"More care should be exercised in the selection of people before appeals for immigration are made, for the sake of labor and good citizenship, and the granting of the franchise to aliens should be more carefully considered. Owing to the ignorance of our language on the part of many of our immigrants and the lack of knowledge of our traditions and ideals, many abuses are likely to develop unless restrictive measures are imposed.

"If there is one thing that is particularly lacking in Canada, it is Industrial Research. Sir George Foster's appointment of the Advisory Board, of which Professor Macallum is the head, cannot be too highly appreciated. This terrible war, with our loss of man power and increase of taxes, necessitates the most careful conservation and utilization of both our natural and industrial resources. To do this, as manufacturers, we must be keenly alive to the crisis we shall pass through after the war, and lose no time in making definite plans to co-operate in every way to utilize to the fullest the facilities which may be afforded by the Advisory Board."

"If we only give evidence of a desire to co-operate," he continued, "very substantial assistance would be forthcoming from the Government. Fellowships and studentships in connection with the scheme instituted by the Government, would keep in Canada the well-trained investigators being turned out annually by our own universities. The progress of our nation would finally depend on the rate at which we turn the principles and theories of science into its ascertained facts."

"The proposal to nationalize into one system all the railways of Canada, with the exception of the Canadian Pacific, concurring with the fiftieth year of the founding of the Dominion, is the most far-reaching scheme since Confederation. If adopted, it promises to give Ontario better transportation



British and Colonial Press photo.

MAJOR LAWRENCE L. ANTHES

Elected Chairman, Toronto Branch of the Canadian Manufacturers' Association, 1917-18.

Major Anthes is managing director, Anthes Foundries, Limited, Toronto and Winnipeg. He was born in Toronto in 1876, and began his business career as assistant to his father, the late H. W. Anthes, later succeeding him as managing director of the foundry company. He has been a member of the executive committee of the C.M.A since 1905, and was elected president of the American Foundryman's Association in 1908, the first Canadian to hold the position. Major Anthes is O.C. 2nd Co., Canadian Engineers, supervising recruiting for engineers and signallers in Military District No. 2.

and better service for every town and county. It will make Ontario and Toronto a great terminal for transcontinental traffic, while all our cities will benefit from the consolidation and the increased efficiency, and, we trust, more economic administration."

Mr. Roden paid generous tribute to the work of the Toronto Housing Company in showing the way economical housing can be obtained, and illustrating a practical way of giving comfort and conveniences as well as hygienic conditions in congested areas.

Referring to important features of recent Provincial legislation, Mr. Roden stated that the Committee had co-operated in placing a Bulk Sales Act on the Statute Book for the greater security of credit.

Commenting on the recent enlargement of the Workmen's Compensation Act, he stated that "the operation of the Act will never be satisfactory until those who are called upon to contribute to its demands have some voice in its administration, and those who participate in its benefits share some of its responsibilities."

Mr. Roden then touched on the duty of manufacturers to co-operate with the Government to meet after war conditions.

The Executive Committee's report dealt in considerable detail with the subjects of recruiting, and employment of returned soldiers, stating that so far as known there is no discharged soldier, able and willing to work, who is at the present time out of employment in the province, while the prospects for employment in the future were very bright.

The city's actual expenditures in connection with the war since it began, and the amounts for which Toronto has made itself responsible, amounts to $4,192,000.

The Committee had prepared and submitted to the Special Committee of the Senate, a scheme of land cultivation and settlement, with special reference to discharged soldiers, which was promised the consideration of Parliament.

The registration of students at Central Technical School showed an attendance of 7,734, an increase over that of all previous years. The branch has provided prizes to the value of $200.00 to the evening students, and the scholarship scheme inaugurated last year enabled the Committee to place 31 scholarships of $25 each, or a total of $750 at the disposal of Dr. Mackay for competition by the students of the day courses. This announcement, along with the recommendation that the Committee's aim for next year be 40 scholarships, was received with marked favor, and five additional scholarships were promptly intimated by members present. It was stated that the services of young people trained in industrial and technical work is much greater than the supply.

The report expressed confidence in the improved financial management of the City during the past year under the competent guidance of Thomas Bradshaw, Finance Commissioner; also in the inauguration of an organized fire school by the fire chief, which not only enhanced the fire-fighting efficiency of the force, but gave recognition to the rapidly growing emphasis placed on the importance of stopping fires before they begin.

Reference was made to the progress of the Toronto Harbor Works, and to the recent exhibition of German and Austrian samples, 8,000 in number, sent by the British Board of Trade for exhibition in Convocation Hall, Toronto University.

The Committee registered its protest against the growing disposition by Government departments to show preference for aliens in the construction of public works. It was claimed that this policy is inconsistent with the efforts being made through our universities and other educational institutions to develop into a high state of efficiency the young men of our country.

The Canadian National Exhibition Committee's report called for larger accommodation, and a more representative catalogue of machinery exhibits both for the benefit of the machinery industry and the Exhibition.

The report of the secretary, H. Macdonald, showed that 115 applications for membership had been received, there having been 28 resignations, of which 18 went out of business during the year, mainly owing to abnormal trade conditions. The membership is now 800.

It was reported that so far not a single appeal against the Business Profits War Tax, which had produced over the $10,000,000 anticipated by the Minister of Finance, had been received, due partly to the patriotic spirit shown by the Canadian business men in remitting their assessments, and in part to the technical assistance given to members by the Executive staff.

Dr. A. C. Mackay, Principal of the Technical School, in the course of a brief address on the relation of the Technical School to the industries said: "If any one is disposed to question the value of the work of the Technical School, I would refer him to the words in the epitaph in St. Paul's Cathedral, London—'*si monumentum requiris circumspice*,'—'if you seek a monument look around.'"

Resolutions were passed in appreciation of technical instruction with special reference to the successful work of the Central Technical School; approving the establishment of Government Bureaus for industrial research; endorsing suburban community settlements for returned soldiers; and of appreciation of Toronto Housing Company's plan for further housing methods on modern lines in Toronto.

The following officers were elected for the ensuing year:—

Chairman—Major L. L. Anthes, Anthes Foundry, Limited.

Vice-Chairman—John Westren, Dunlop Tire & Rubber Goods Co., Limited.

Executive Committee—R. L. McIntyre, McGregor & McIntyre, Limited; W. C. Laidlaw, R. Laidlaw Lumber Co., Limited; J. A. Scythes, Scythes & Co., Limited; James Litster, Litster Pure Food Co., Limited; A. H. Jeffrey, Polson Iron Works, Limited; Frank E. Mutton, International Time Recording Co.; S. H. Chapman, Ontario Wind Engine & Pump Co., Limited; T. F. Monypenny, Imperial Varnish & Color Co., Limited; J. P. Murray, Canadian Oil Producing & Refining Co., Limited, of Petrolia; John Hillock, John Hillock & Co., Limited; Griffith B. Clarke, A. R. Clarke & Co., Limited; John Miller, Lever Brothers, Limited; Morden Neilson, William Neilson, Limited; J. A. Riordan, Standard Sanitary Mfg. Co., Limited; Frank W. Stone, Stone, Limited.

The following were elected representatives to the Executive Council of the Association:—

Representatives to Executive Council—George Brigden, Brigdens Limited; J. P. Murray, Canadian Oil Producing & Refining Co., Limited; W. C. Phillips, Frontenac Moulding & Glass Co., Limited; G. Frank Beer, Consolidated Optical Co., Limited; R. D. Fairbairn, R. D. Fairbairn Co., Limited; Thomas Findley, Massey-Harris Co., Limited; W. B. Tindall, Consumers' Box & Lumber Co., Limited; T. F. Monypenny, Imperial Varnish & Color Co., Limited; W. C. Coulter, Booth-Coulter Copper & Brass Co., Limited; J. Westren, Dunlop Tire & Rubber Goods Co., Limited; J. S. McKinnon, S. F. McKinnon Co., Limited; Sam Harris, Harris Lithographing Co., Limited; Thomas Roden, Roden Brothers, Limited; E. J. Freyseng, Freyseng Cork Co., Limited; R. L. McIntyre, McGregor & McIntyre, Limited.

The representatives to the Canadian National Exhibition Association were elected as follows:—

Representatives Canadian National Exhibition Association—G. T. Irving, The Irving Umbrella Co., Limited; J. P. Murray, Canadian Oil Producing & Refining Co.; George Brigden, Brigdens Limited; J. S. McKinnon, S. F. McKinnon & Co., Limited; W. C. Phillips, Frontenac Moulding & Glass Co., Limited; Sam Harris, Harris Lithographing Co., Limited; E. J. Freyseng, Freyseng Cork Co., Limited; James Litster, Litster Pure Food Co., Limited; T. A. Russell, Russell Motor Car Co., Limited; John Firstbrook, Firstbrook Brothers, Limited; W. C. Coulter, Booth-Coulter Copper & Brass Co., Limited; H. N. Cowan, Cowan Co., Limited.

Among Our Exchanges

Extracts from instructive articles appearing in the columns of the Canadian Trade and Technical Press.

POTASH FROM FELDSPAR.

The Story of a Remarkable Discovery made by a Canadian in the Chemical Industry.

Over three years ago the necessity of procuring a potash supply in Canada impressed itself upon Mr. Allan Grauel, C.E., of Kitchener, Ont., a gentleman of an inventive and original turn of mind. He was financially interested in a powder plant at the outbreak of the war, and the impossibility of securing the necessary potash for their operations induced him to devote his attention to the problem. Mr. Grauel had been a "hard rock" operator all his life, and he naturally turned to feldspar as the logical and proper source of supply.

Undeterred by the failures of others, and undeterred also by the discouraging results of his, and with the aid of several chemists and authorities whose services he had enlisted, Mr. Grauel set resolutely to work to perfect a process for treating feldspar. For many weary months he persevered under conditions which would have caused the majority of men to abandon the project in disgust; but, fortunately, he had confidence in his own ability and believed he could see the way out of it as he profited by the information gained as he progressed. The experiments were very costly, requiring many thousands of dollars. Mr. Grauel speedily exhausted his own financial resources, and to his other difficulties was added the handicap of lack of necessary funds. However, a few loyal friends, who had confidence in him, stood behind him at critical times, until finally he and they had the eminent satisfaction of seeing his dreams come true and his efforts crowned with success—a success achieved beyond question.

This fact, as we have already said, is a matter of more than ordinary importance from either a scientific, industrial or mechanical viewpoint, inasmuch as it affects vitally the interests of our citizens as individuals, and the nation and the Empire. The discovery has given Canada at once a great and permanent industry, capable of almost immeasureable expansion in the time of peace, and to the Empire an asset of almost incalculable value in time of war. It is really a "war bride," but one which will develop and expand its beneficial effects on the country in a score of ways long after the grim shadows of the scourge of war have been forgotten, contributing to the wealth of the nation, the fertility of our vast agricultural regions and to the health of our citizens. An abundant supply of potash, at reasonable prices, to an agricultural country such as Canada may be of inestimable value if wisely and properly utilized.

The process, which is protected, consists in heating to a high temperature in a blast furnace, 110 tons of a mixture of feldspar, coal, calcium chloride and limestone. The limestone is used to render the slag fluid, while the chlorine of the calcium chloride combines with the potash, forming potassium chloride which distills over at the temperature of the blast furnace into a condenser, where it meets a current of steam, in which it dissolves. By a process of evaporation and crystallization of the solution thus obtained, the salt is obtained in a high state of purity.

It has been exhaustively tested and proven out in the plant of the National Portland Cement Company, Limited, at Durham, Ont., and elsewhere; indeed, the success of the process is in a large measure due to the earnest co-operation and assistance rendered by Mr. William Calder, formerly president and general manager of the plant at Durham, who unsparingly placed his extensive modern equipment, as well as his personal resources, at the disposal of Mr. Grauel for the concluding experiments under commercial conditions. It is problematical if anything tangible would have resulted at this time without the liberal, mechanical assistance rendered by Mr. Calder. It was of the greatest benefit to the experiments to be able to conduct them under precise commercial conditions, in a great modern plant representing a capital investment of $1,000,000. Without it much of the work would have been little better than supposition, and would have lacked the accuracy essential to the successful outcome. The trouble which has confronted many others who have experimented with feldspar lay in the fact that they had done their preparatory work in a laboratory or with small working models of a plant; but when they began a practical test in a commercial plant numerous unforeseen and insurmountable difficulties were encountered. Mr. Grauel was therefore fortunate in having a huge million dollar plant absolutely at his service, with full permission to alter and adjust wherever found necessary.

For the present only muriate of potash will be produced, but satisfactory experiments have been conducted in the manufacture of caustic potash. It is, of course, also comparatively easy to produce chlorate from the chloride, but the process requires extensive and costly electrical installations which are difficult to obtain at present, and, therefore, while both caustic and chlorate are worth the fabulous price of $1,800 to $2,000 a ton, the entire manufacturing attention of the National Potash Corporation, Limited, the company which has been organized to operate under Mr. Grauel's patents, will be concentrated on the production of muriate, which is so urgently required in the manufacture of explosives and for fertilizers for the great wheat, corn and cotton belts upon which we are dependent for three agricultural commodities almost as essential to the success of the Allies as explosives. Within a short time, however, the equipment for manufacturing caustic will be installed. The company expects to have its first unit, with a capacity of 20 tons a day, in active operation by the first of June.

Under this process it is possible not only to produce great quantities of potash, but to obtain muriate which is almost chemically pure, a standard, heretofore unobtainable without special refining. Samples have been shown averaging, according to statistics, 98 per cent. pure. When it is considered that the German muriate usually averaged 80 per cent. pure, it will readily be conceded that the new Canadian process is a scientific achievement of great interest to the chemical trade. It might even foreshadow a radical change in trade conditions, if the company can produce 20 tons per day per manufacturing unit. As the raw materials abound in all the Laurentian formations throughout Ontario and Quebec, in inexhaustible quantities, the producing capacity would only be limited by the requirements of the trade.

It is possible to so adapt the process and the equipment as to utilize cement marl as a raw material instead of feldspar, where the latter is not readily obtainable, and it is also possible to utilize either rotary kilns or blast furnaces of a certain type for releasing the potassium fumes. This is of a very material benefit to manufacturers, as there are numerous idle cement plants throughout this country. In the operation of a cement plant, the potash is virtually a by-product, as the residue or clinker from the feldspar mix makes a Portland cement of an exceptionally high quality, and there is no curtailment of the capacity of the plant in the matter of cement. Thus a plant which is producing, say 1,500 barrels of cement a day as an average, will simultaneously produce upwards of 20 tons of muriate of potash in the same time.

In addition, the vast amount of dust, which has hitherto passed up the smokestacks and has been dissipated over the countryside, can be trapped within the plant and converted

into a valuable by-product as fertilizer. It has been shown by analysis that it contains from 3.09 to 10.7 per cent. of alkaline chlorides, mixed with lime and other substances, constituting a high-grade agricultural fertilizer. Upwards of 60 tons a day of this important commodity, which formerly went absolutely to waste in a plant operating eight rotary kilns, is thus converted into a useful article worth from fifteen to twenty-five dollars a ton.—*By D. J. Benham in the Canadian Chemical Journal.*

GOVERNMENT ADVERTISING IN CANADA.

Increasing Extent to which National and Provincial Governments are Using Newspaper Space.

In Canada, as in Great Britain, it has been demonstrated beyond question that the advertising columns of the press can be used effectively in promoting the business of the Government.

Since the war began, the Canadian Government has conducted sixteen distinct advertising campaigns. It is now by far the most extensive general advertiser in Canada. Its advertising appropriations during 1916 exceeded the combined appropriations for that year of any other three Canadian general advertisers. Already, in 1917, its advertising expenditure has been almost as large as for the entire twelve months of 1916.

Canadian Provincial Governments also are using paid advertising space in their work. The Ontario Government has conducted six advertising campaigns. Three campaigns have been put on by the Government of British Columbia. The Alberta Government has just concluded its first campaign. There is good ground for the belief that two other Provincial Governments will become regular advertisers in the very near future.

The first advertising campaign of the Canadian Government in the press of Canada was the Apple Campaign of 1914. Its purpose was to increase the domestic consumption of Canadian apples in order to make up for the loss of foreign markets through the war. The food and other values of the Canadian apple were presented attractively in educational advertisements and a booklet of apple recipes was offered. There were 65,000 individual requests for that booklet and at the close of the campaign many wholesale apple dealers reported increases in the sale of Canadian apples for domestic consumption of from 200 per cent. to 400 per cent.

In the early spring of 1915, educational advertising was used to impress upon the farmers of Canada the need of increased agricultural production in view of the war and to suggest means of meeting that need. The campaign resulted in an increase of over 10 per cent. in the area under cultivation and, in conjunction with good weather conditions, in record yields per acre. The value of Canada's farm production for 1915 was over $300,000,000 in excess of the previous high record. Over 100,000 special bulletins offered in the advertisements were requested by farmers.

Three domestic War Loans have been floated in Canada through educational advertising instead of through the customary method of underwriting. The aggregate amount asked for in these loans was $250,000,000; more than double that amount was subscribed. The underwriting of these Loans would have cost over $3,000,000. The advertising of the three Loans cost about $130,000.

The need of thrift and savings in view of the war was emphasized in a series of Government advertisements. This series was followed by the advertising of Government War Loans, Debenture Stock and War Saving Certificates. On March 29, 1917, the Canadian Minister of Finance, in summarizing the results of the thrift campaign, reported that the savings of the people of Canada during the previous two years had been at least $500,000,000. This amount represented the payments on the first two War Loans, the Debenture Stock and the War Savings Certificates, plus the net increase in the savings deposits in the chartered banks of Canada. These figures should be considered in conjunction with the fact that the population of Canada is less than 8,000,000.—*John M. Imrie in the Canadian Printer and Publisher.*

THE CANADIAN TOY INDUSTRY.

How Furniture Manufacturers are Taking Advantage of the Opportunity to Make Toy Furniture.

A great deal of credit is due Canadian toy manufacturers, both new companies organized to manufacture them exclusively and older companies who are manufacturing these goods as one of several lines. Although it is but a short time since the possibilities of the industry became generally known, already, in the course of two or three years, toy making has been placed on a sound footing and gives promise of developing into a position of considerable prominence.

The furniture trade is now realizing fully the possibilities in Canadian toys, and, in various parts of Canada, furniture dealers are giving the subject a great deal of consideration. Already a number of furniture manufacturers are turning out toys of a particularly high order, and are giving an example of thrift of which Canada might well be proud. Take, for example, the toy furniture which has met a popular demand and is being sold in increasingly large quantities. Some of Canada's foremost furniture factories are manufacturing lines of children's furniture that include practically all lines, such goods as desks and chairs, Morris chairs, kindergarten sets, couches, dressers, arm chairs, rockers, chiffoniers, kitchen cabinets and miscellaneous lines. The goods are finished in white enamel, surface oak or mission, as desired. They are not frail toys like many of those of foreign make that have been placed on the market in the past, but strongly constructed, serviceable pieces, made along almost the exact lines of the regular furniture. Take the case of dressers, chiffoniers, etc.; these are equipped with drawer pulls and mirrors; kitchen cabinets with glass doors, etc., and besides all are carefully ornamented. The goods are simply miniatures of the big lines and suitable for children up to twelve or fourteen years of age. Take for example the Morris chair. This is made with a small upholstered seat and back and will support the weight of a full-grown man. Beds are being made in brass, wood and iron that are not only patterned exactly after large beds, but are finished in modern finishes and are very strong and durable.

This class of goods were, previous to the war, manufactured in Germany, and for this reason the Canadian manufacturers are deserving of all the support and encouragement that it is possible to give them. Aside from this, however, a comparison of the Canadian products with those that were formerly made in foreign countries shows that the made-in-Canada article is very much superior in quality and workmanship, and the margins of profit are such that the furniture retailer can do exceedingly well.—*The Furniture Journal.*

APRIL FIRE LOSSES.

Total was under that of Previous Month and also of April, 1916.

According to estimates compiled by the *Monetry Times*, the fire loss throughout Canada during the month of April amounted to $1,317,714, as compared with $2,050,650 during March and $1,460,437 during April, 1916. The total for the first four months of the year is thus brought to $7,296,977. This record compares as follows with the first four months in the three preceding years:—

1914	$10,293,962
1915	5,364,885
1916	7,791,755

CUTTING FIRE INSURANCE EXPENSES.

In Queensland, Australia, the Government has been Limiting Commissions.

Canadian fire insurance agents who are prone to thinking their lot is not a happy one, should take a look at Queensland. In that State the Government has tackled the thorny problem of the fire companies' expense ratio, and handled it without gloves. Commissions have been limited to 10 per cent. and can be paid only to licensed brokers or agents. Payments to general agents are limited to 5 per cent, to one such in the northern district and one such in the central district.

The stock fire companies' tariffs are at the same time cut 20 per cent., and can only be raised if results in any district or class show the need of increased rates. This cut is met by the above reduction in agents' commission, and by doing away with a 10 per cent. discount to the insured, which had been uniformly made to compete with the mutual companies. Now the mutual companies will quote the same rate as the stock companies.—*Chronicle.*

FIRE INSURANCE IN 1916.

Statistics are Published by the Insurance Department Summarizing Last Years' Business.

The Superintendent of The Dominion Insurance Department has published an abstract report of insurance transacted in Canada during 1916, which furnishes some interesting figures. The report states that the total fire insurance premiums paid to companies licensed by the Dominion amounted to $27,713,308, as compared with $26,474,833 during 1915. This sum was divided among British, Canadian and foreign companies as follows:—

	Premiums.	Losses paid.
British companies	$14,304,219	$7,931,021
Canadian companies	4,736,038	2,580,594
Foreign companies	8,673,051	4,611,280
Totals	$27,713,308	$15,122,895

This shows a loss ratio for all three classes of company throughout Canada of 54.57 per cent. for losses paid, while the ratio of losses incurred was 59.57 per cent. The total insurance purchased by the above-mentioned premiums was $247,798,040.

The following table has been compiled from the report and enables a comparison to be made between the various provinces. It is very difficult to establish whether one province is actually better or worse than another in regard to its fire waste. It is obviously useless to compare loss ratios as furnished by the insurance companies, as these are based solely on premiums paid, and the rates of premium are naturally adjusted so as to show as uniform a loss ratio as possible in all parts of the country.

Probably the most accurate method of arriving at the desired result would be to compare the actual fire losses (irrespective of insurance) in conjunction with the value of insurable property. It is almost impossible, however, to obtain figures for such a comparison and, even if this were not the case, it would be necessary to take into account the fact that the fire losses on manufacturing plants, for instance, are naturally and inevitably higher than on farm buildings, so that a comparison between Ontario and Alberta, based on total losses and total values would hardly be fair. The table given below permits a comparison between the various provinces on the basis of premiums received and losses paid by the insurance companies licensed here.

	Premiums paid.	Losses paid.	Loss Ratio.
Alberta	$2,087,277	$996,570	47.79
British Columbia	2,915,504	1,304,337	44.74
Manitoba	2,625,015	1,372,885	52.30
New Brunswick	1,285,767	791,084	61.52
Nova Scotia	1,251,035	629,454	50.31
Ontario	9,747,473	7,367,395	75.58
Prince Edward Island	113,344	245,141	216.28
Quebec	6,987,678	3,406,765	48.75
Saskatchewan	2,342,632	917,892	39.18

Although this table does not furnish an adequate comparison as to the actual fire losses of the respective provinces, it shows which provinces have, for the year under survey, paid too little or too much for their fire insurance. An average loss ratio of 50 per cent. of premiums received is considered by the companies to be very satisfactory. It will be seen that Alberta, British Columbia, Quebec and Saskatchewan enjoyed unusually low loss ratios, that of the last named province being particularly satisfactory. Prince Edward Island can scarcely be considered for the purpose of comparison, as the value of its insurable property is not sufficiently large to provide a reasonable average. One or two large fires would be sufficient to wipe out the premiums paid, and the Island's deplorable loss ratio of 216 per cent. may be attributed to a stroke of bad luck. Ontario is the worst offender. Its loss ratio of 75.58 per cent. means that the insurance companies as a whole lost money on their operations in this province during 1916.

The amount of insurance reported to the Department as having been placed with unlicensed companies during 1916 is $247,798,040. The amount is divided as follows:—

Lloyd's	$54,040,523
Reciprocal underwriters	27,111,426
Mutual companies	124,704,514
Stock companies	41,941,577

It is interesting to note that the average rate paid for fire insurance in Canada is gradually being reduced. The average rate paid to companies with a Dominion license during 1916 was 1.09 per cent., as compared with 1.16 per cent. for 1915. It is only reasonable to suppose that the average rate will continue to diminish until it is less than half the present figure. The erection of new buildings of superior construction and the installation of approved fire protective appliances will naturally tend greatly towards this end, but some active and organized methods of fire prevention will have to be adopted before Canada can reach the low insurance rate enjoyed by most European countries.

TARIFF

By J. R. K. BRISTOL

CUSTOMS RULINGS.

Compart boards, per sample, dutiable under Item 468.

Certain loom harness, per samples, dutiable under Item 468.

Newfoundland cod oil, free of any duty under section 8 of the Tariff Act.

Ferro chrome, per sample, dutiable under Item 375.

DEPARTMENTAL INSTRUCTIONS.

Well-drilling machinery and apparatus for drilling for water, natural gas and oil, in general, are held to be of a class or kind manufactured in Canada, and, as such, are not entitled to entry under tariff item 469, with the exceptions noted below.

The following well-drilling machinery and apparatus believed to be of a class or kind not manufactured in Canada may be entered under tariff item 469 until further instructed.

Well-drilling machinery operated on the "Rotary Flush system," the "jetting flush system," or the "hydraulic system," and in which the chisel-shaped drill is not used, not to include motive power.

Case-hardened and forged steel nipples for recutting threads on casing or in casing coupling when lost in the well.

Well packers.

Swivel wrench (Barrett's).

Oil well jacks (Barrett's), not including wrenches for tightening and loosening joints.

Apparatus of greater weight or diameter than stated below:—

Drilling bits, 1,100 lbs.
Under reamers, 1,060 lbs.
Drilling jars, 725 lbs.
Fishing jars, 650 lbs.
Swedges, 740 lbs.
Casing spears for 12-inch. dia. casing.
Casing cutter for 6-inch. dia. casing.
Ring and wedges (sometimes called spider and slips) for 6½-inch dia. casing.
Elevators for raising and lowering casing for 5-inch dia. casing.

Collectors of Customs are instructed to refer any special case to the Department for ruling when the importer desires to appeal against the decision for the collection of duty on well-drilling machinery and apparatus.

INTOXICATING LIQUORS.

The Department of Customs has instructed all Collectors of Customs throughout the Dominion of Canada, as follows:—

"Complaint has been made that some ships and vessels arriving from places outside of Canada carry intoxicating liquors in small packages and deliver same in Canada without report at Customs or entry for duty.

"This is a direct violation of Customs Laws. Drastic action is authorized to be taken against persons found contravening the law in delivering intoxicating liquors from abroad without report at Customs.

"Collectors of Customs are instructed to detain all vessels made use of illegally in this manner and report particulars by wire to the Department of Customs, Ottawa, for further action.

"Collectors are to notify masters of vessels visiting their ports accordingly and to use their best endeavours for the enforcement of the law."

LICENSES REQUIRED FOR VOYAGES OF SAILING VESSELS REGISTERED IN CANADA.

An Order-in-Council respecting sailing vessels registered in Canada and engaging in voyages to or from any port in the United Kingdom or any other port in Europe, was passed on the 30th April, 1917, as set forth below:—

1. Every sailing ship registered in Canada is prohibited from engaging in any voyage, after the 1st May, 1917, from a port in Canada, or any foreign port, to a port in the United Kingdom, or to any other port in Europe, or vice versa, unless a license to do so has been granted to or in favor of the owners or charterers of such sailing ship.

2. The committee of persons appointed by the Minister of Marine and Fisheries, under the provisions of the Order-in-Council of 11th March, 1916, respecting the licensing of steamships exceeding 500 tons gross tonnage, shall have power to grant the licenses required by the next preceding paragraph. Licenses may be general with reference to any such sailing ship and its voyages, or may be special with reference to a particular voyage.

All sailing ships violating any of the provisions of these regulations shall be subject to forfeiture.

EXPORT ENTRIES.

The Department of Customs has instructed all Collectors of Customs throughout the Dominion of Canada, as follows:—

"Customs Officers are hereby instructed to specially direct the attention of shippers or their agents in the execution of export entries (Form B-13) that a separate export entry (Form B-13) executed in duplicate is required to be made for each shipment less than a car load lot; also that export entries in duplicate are required to be executed for each car used in comprising a total consignment or shipment. Also that great care is required to be exercised by the shipper or his agent in giving the correct quantities and value on such export entries (Form B-13 amended)."

WAR MEASURES—PROHIBITED EXPORTS.

An Order-in-Council has been passed which prohibits the exportation of natural and synthetic sapphires and rubies to all destinations abroad other than ports and destinations in the United Kingdom.

WHEAT FLOUR.

By Order-in-Council, under the authority of the War Measures Act, 1914, section 6, provision has been made for the free admission of wheat, wheat flour and semolina—effective on and after April 17, 1917.

THE BRITISH TRADE CORPORATION.

(*From Board of Trade Journal*).

The following announcement was issued by the Privy Council Office on 14th April:—

"His Majesty was this day pleased, by and with the advice of His Privy Council, to approve the draft of a Charter of Incorporation for 'The British Trade Corporation.'

"(The establishment of this corporation is the outcome of the report of the Committee on Financial Facilities for Trade, which was reviewed on p. 944 of the *Board of Trade Journal* of 28th September last. Speaking at the annual conference of the Association of Chambers of Commerce of the United Kingdom, held in London on 20th and 21st March, Sir Albert Stanley, M.P., the President of the Board of Trade, stated that the object of the corporation, which would have the sympathy and support of the Government, would be to facilitate the development of British trade at home and abroad. There was ample room for such an institution in this country. It would not interfere with the operations of the British joint stock banks or any British or Colonial banks, to whose work Sir Albert paid a cordial tribute, but would fulfil functions for industry and trade which the present banking institutions were, perhaps, not capable of doing. He was quite sure that all the banks would give their sympathy and support to the new undertaking, and he hoped they would see their way to become large shareholders in the institution. The corporation would have on its board representatives of industry and commerce, and have associated with it men expert in various industries and possessed of a very wide knowledge of the world and its affairs. It was proposed to attach to it an information bureau capable of examining new projects with a view to extending credit where needed.)"

TRADE LICENSES IN ARGENTINA.

(*From Board of Trade Journal*).

H.M. Minister at Buenos Aires reports that a Law (No. 10,218) was promulgated on 21st February, modifying the Law (No. 4,934) under which national licenses are imposed in Argentina.

Articles 2 and 4 of the new Law are the only two which appear directly to affect foreign business. Under Article 2 the cost of a license for the representatives and commercial travellers (comisionistas viajeros del extrangero) of foreign firms will in future be from 500 pesos currency (£43, 13s.) to 5,000 pesos (£436, 10s.); under Law 4,934 the cost was fixed at 500 pesos. This tax, however, is only in respect of licenses granted by the Federal authorities to representatives and commercial travellers operating in the capital of the republic and in the national territories, and is exclusive of taxes imposed on such persons by the various municipalities.

Under Article 4 firms or individuals who habitually import general merchandise from abroad on ships' parcels receipts, instead of as cargo, and through the parcel post, must pay a license, under category No. 94 of Law 4,934, of from 300 pesos (£26, 4s.) to 5,000 pesos (£436, 10s.) as importers of general merchandise.

These licenses are annual, and are imposed according to the volume of the business done.

H.M. Minister has forwarded the text of the new Law (in Spanish), and this may be consulted by British firms interested at the Department of Commercial Intelligence, 73 Basinghall Street, London, E.C. 2.

ARTIFICIAL LEATHER.

Following are particulars of a process of making artificial leather, a patent for which has been granted in Great Britain.

Artificial leather is made by coating canvas, etc., with a composition made by dissolving colophony in linseed-oil varnish to form a viscous paste and adding successively milk curd and slaked lime. Several thicknesses of coated fabric may be stuck together, dried, soaked in water to soften them, and then pressed into sheets. Powdered leather waste may be added, and the composition rolled into sheets.—*The Australian Saddler and Harness Maker* (Melbourne and Sydney).

FOREIGN TRADE OF CANADA.

IMPORTATIONS.

(Comparison 1915, 1916, 1917.)

Month of April.

	1915.	1916.	1917.
Dutiable Goods	$16,615,321	$28,929,084	$44,786,638
Free Goods	11,776,319	21,218,746	42,021,171
Total	28,391,640	50,147,830	86,807,809
Coin and Bullion	572,116	464,789	502,362
Grand Total	28,963,756	50,612,619	87,310,171
Duty Collected	5,986,662	9,797,265	13,875,485

EXPORTATIONS.

For April.

	——1915——		——1916——		——1917——	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$2,795,002	$1,957,463	$3,690,744	$1,523	$3,889,510	$4,360
The Fisheries	710,447	20	829,515	2,377	648,336	10,406
The Forest	1,929,440	.....	2,287,939	26	2,461,312	2,410
Animals and Their Produce	3,312,498	52,840	5,112,105	282,519	5,514,691	75,897
Agriculture	6,618,443	38,482	21,305,977	33,054	11,443,161	712,256
Manufactures	13,221,658	439,228	21,573,078	397,039	40,859,646	804,286
Miscellaneous	104,401	96,652	292,677	92,523	328,793	186,199
Total Merchandise	$28,691,889	$2,584,685	$55,092,035	$809,061	$65,145,449	$1,795,814
Coin and Bullion	.....	4,980,701	.....	71,619	.....	68,601
Grand Total, Exports	$28,691,889	$7,565,386	$55,092,035	880,680	$65,145,449	$1,864,415

TRANSPORTATION

By J. E. WALSH

HIGHER RATES WANTED.

General Advance of 15 per cent. in Freight and Passenger Tariffs is Asked by the Railways.

All members were advised by Circular No. 138 of the application of the Railways to the Board of Railway Commissioners for a recommendation to the Governor-in-Council for the passage of an Order-in-Council under the War Measures Act, 1914, permitting them to make a general advance in the tariffs of tolls of 15 per cent. upon the ground that such advance is necessary and advisable for the security, defence, peace, order and welfare of Canada within the meaning of said Act. Comparative statements were filed in support of the application. Some of the principal items were quoted in the circular. The yearly increases shown by the Canadian Pacific Railway amount to $13,850,541.46. This is based on a comparison of the cost of material for 1917 over 1915. No information has been furnished in regard to the increased cost of labor. That there have been substantial increases there is no doubt; in fact the C.P.R recently announced that an agreement with the different labor organizations had resulted in increases varying from eighteen to twenty-five per cent.

The Grand Trunk statement shows an increase in the cost of equipment and material, 1917 over 1916, of $4,333,533, and compared with 1915 an increase of $7,890,827. The increase in cost of coal for 1917 over 1916, based on 1917 quantity, amounts to $5,242,500, on lumber and ties $282,870, making a total of $5,525,370. The total increase for equipment, material, coal, lumber and ties, according to the statement, amounts to $9,808,903 for 1917 over 1916.

The Canadian Northern statement filed in support of the application, shows an increased cost of $5,190,945 over 1916, the largest item being coal—$3,335,492.

None of these statements include labor. According to the last Annual Report of the Department of Railways and Canals the gross earnings of Canadian railways for the past fiscal year were $263,527,157. Fifteen per cent. would, therefore, mean an increased revenue of $39,529,073.55. To this, however, should be added the increase allowed by the Board of Railway Commissioners in the Eastern Rates case, of approximately five per cent.

It can hardly be expected that the advance asked for will be allowed on all tariffs of tolls. In fact the Association has stipulated that exceptions should be made on tariffs covering switching, milling-in-transit and similar services.

It would be difficult to estimate in dollars and cents the enormous waste caused by the failure of the railways to give anything like an adequate service during the past year. These facts have been carefully considered by the Transportation Committee of the Association and with the hope of some improvement in the service the following resolution has been adopted and filed with the Board of Railway Commissioners:

The Canadian Manufacturers Association will not oppose such increase in rates as the Board of Railway Commissioners considers proper, with the exception of tariffs covering coal, coke, switching, milling-in-transit and similar services, on the following conditions:

1. That it be considered strictly as a war measure, and that the proposed increase shall remain in force for a certain period only, to be determined by the Board.

2. And further, that the Board of Railway Commissioners have satisfied themselves that the increase will enable the railways to provide an adequate service throughout.

It was the view of the Committee that immediate assistance is necessary in view of the increases in cost of material and the demands of labor. The question of service has been dealt with very forcibly by Mr. A. H. Smith, President of the New York Central R.R., in the minority report of the Royal Commission to enquire into Railways and Transportation. He says:

"The railways of Canada are in desperate need of equipment. Whatever decision is made with reference to the railways, the transportation problem is now acute in so far as equipment is concerned. I would, therefore, recommend that the Government undertake at once to provide an ample supply of freight cars and locomotives against immediate and imperative needs. These cars and engines may be had, if desired, under trust agreements. It will be a simple matter to turn these cars over to the operating companies under lease or contract of purchase, which may be exercised when conditions are more nearly normal."

PROOF REQUIRED.

An Important Decision of Interest to Shippers Rendered by a Quebec Court.

The Quebec Court of Review has recently reversed a decision of the Superior Court, and ruled that a railway company must give proof that notice to remove goods has been delivered to consignee before the company can claim for demurrage. Justice Greenshields, who delivered the Court's judgment, after quoting Section 6 of the conditions of the Bill-of-lading, said:

It would seem perfectly clear from this Section that whatever liability a consignee may incur by reason of his failure to remove the goods, that liability attaches only after a written notice has been sent or given by the carrier.

I should say that the sending or giving of that notice is a condition precedent to the right of the carrier to do the things or exact the penalties provided for in Section 6 of its contract.

Further:

Under the Section 6, as it now reads, I should say that the obligation of the carrier, in order that it may enforce its contract, is to prove that the notice reached the defendant, or reached his domicile or place of business. The defendant in this case has not discharged that obligation.

This settles a question that frequently arises. It is now made clear that the burden of proving due notice is upon the carrier, whose duty it is to give it in a way capable of proof.

To quote further from the judgment:

I, therefore, am of opinion, that the giving of the notice was a condition precedent to the right of the defendant to claim demurrage from the plaintiff. I am of opinion, that the entire burden of proving, not the mailing of the notice through the post office, but the giving of the notice, rests upon the defendant company (the Canadian Pacific Railway). I am of opinion that the company defendant must prove that the notice reached a place under the control of the consignee or his employees or servants. The company defendant has not done this.

"FOLLOW LOT" RULE.

Rule 3, Canadian Freight Classification No. 16 Receives Two Important Amendments.

The Board of Railway Commissioners, on May 23rd, issued General Order No. 189, giving its decision in connection with the matter of proposed cancellation of the application of Rule 3, Canadian Freight Classification No. 16, to "Commodity" tariffs.

Hearings were held in regard to this matter at Ottawa on the 21st of November, and at Toronto on the 13th of December, 1916, at which representatives of both the railways and the shippers submitted evidence.

The Order of the Board makes two very important amendments to Rule 3 of Canadian Freight Classification No. 16—also disallows the rule appearing in the "commodity" tariffs of the carriers which prevented the application of "Rule 3," Canadian Freight Classification No. 16.

The amendments to "Rule 3," shown in General Order of the Board No. 189, are as follows:

First—For the words;
" provided that the first car (or cars) is loaded to the classification minimum,"
substitute the words;
" provided that each car except the car carrying the excess must be loaded to its *visible or marked capacity*."
Second—For the words;
" not less than 20,000 lbs. per car,"
substitute the words;
" not less than 24,000 lbs. per car."

It will be seen that these amendments require that each car except the car carrying the excess must be loaded to its *visible or marked capacity*, whereas the present requirement is that each car except the car carrying the excess must contain 20,000 lbs. or more of freight whether it fills the car or not.

The minimum weight has also been changed, which has the effect of disallowing the application of "Rule 3" to certain commodities classified fifth-class or higher in Canadian Freight Classification No. 16 having a minimum of 20,000 lbs. and under 24,000 lbs., which formerly enjoyed the application of the rule.

To clearly illustrate the working of the amended rule, take a shipment of stamped ware. The first car must be loaded to its *visible or marked capacity*, the second car containing the balance, the entire shipment in the two cars to be charged at the established carload rate, either class or commodity, at actual weight subject to minimum of 24,000 lbs.

If the shipment required three cars for its transportation, the first and second cars would have to be loaded to the visible or marked capacity, the balance to be placed in the third car, the entire shipment to be charged at the carload rate and actual weight subject to minimum of 24,000 lbs.

THE RAILWAY PROBLEM.

Review of Report of Royal Commission to Enquire Into Railways and Transportation.

As has been announced in the daily press two reports have been issued by the Commission appointed by the Government to enquire into railways and transportation in Canada. A majority report has been filed by Sir Henry L. Drayton, Chairman Board of Railway Commissioners for Canada, and Mr. W. M. Acworth, the well-known English authority, and a minority report by Mr. A. H. Smith, President of the New York Central R.R., who was appointed Chairman of the Commission.

These reports have been, and are still being discussed in the press. As space will not allow a general review of the reports, it may be explained briefly that the suggestion made by Sir Henry L. Drayton and Mr. W. M. Acworth is, that the Government should take over the Canadian Northern, the Grand Trunk and the Grand Trunk Pacific Railways, and delegate their management, together with that of the Intercolonial and the Transcontinental to a Board of Trustees, the first members of this Board of Trustees to be named by Parliament, and their successors to be named by the Governor-General in Council on the nomination of the members of the Board themselves.

Mr. Smith suggests, first, that the Grand Trunk shall take over and operate the Eastern lines of the Canadian Northern; second, that the Canadian Northern shall take over and operate the Grand Trunk Pacific lines in the West; third, that the Government, through a Board of Trustees, shall take over and lease the lines between North Bay and Winnipeg, except those of the Canadian Pacific, to either the Canadian Northern or the Grand Trunk, and if neither applies, to some other qualified company. In other words, he would have the Canadian Northern confine itself to the West and the Grand Trunk to the East. Each would then have a well-defined territory, and would be able to eliminate much of the present duplication and mileage of service. He suggests no change in the Government operation of the Intercolonial and the eastern part of the Transcontinental.

All of the commissioners agree that Government ownership is undesirable. However, the majority express the opinion that a board of trustees, absolutely free from political interference, would solve the question. There is no doubt but that the suggestion is a decided improvement upon Government management, but, as it has been pointed out by Mr. Smith, if one parliament can create a government board to manage this proposed system of twenty thousand miles, why cannot another parliament abolish the board, and turn the system over to political management under the Minister of Railways? The majority of the Commission agree with him that it would be better to leave the present private railways in private hands than to have this occur.

Mr. Acworth, who subscribed to the majority report, would seem to be in doubt as to the ability to successfully operate under the conditions recommended. In an historical sketch given by him at a hearing of the Newlands Joint Congressional Committee on Interstate Commerce, which is investigating subjects pertaining to railway regulation and control, held recently at Washington, Mr. Acworth said:

" The essential lesson of the history may be said to be this: It is impossible to obtain satisfactory results on government railways in a democratic state unless the management is cut loose from direct political control."

Further—

" Some day, perhaps, having learned wisdom by experience, a parliament and a people may recognize that management for the people is not necessarily management by the people; that there are other branches of government, besides the judicial branch, unsuited for popular interference; and may establish a permanent state railway organization, with its own board of directors, with its own separate budget, and entirely independent of parliamentary control, but controlled like any private company by a judicially-minded commission, required also like a private company to earn a dividend for its stockholders, the people. And then a main objection to government railways in a democratic state will have lost its force. But, hitherto no parliament and no people have recognized this fact, even though it stands out abundantly clear on the pages of railway history."

There have been four separate reports, two issued by the Railway Commission and two issued by private parties, on the question of the reorganization of our railways, within

the past six months, and they all have agreed that there should be no political interference in the management thereof.

Notwithstanding this, the people of Canada have invested a large amount in the development of transportation—in all, according to the report, $968,451,737. This includes guarantees outstanding amounting to $256,042,992. The investment in our waterways amounts to, approximately, $400,000,000. These have been made absolutely free. That Canada's growth depended upon construction of railways is well recognized. The development of the country's resources depended entirely upon railway building. It was necessary to aid in the construction of these roads. That the policy was sound is evidenced by the growth of the Northwest. That it has been abused because of the lack of regulation is reflected in the present condition of affairs. Competing lines have been built where, had there been proper control, a large part of the investment would have been saved. "Instead of co-ordination and conservation under Government supervision, railways were permitted to duplicate plants in fields not yet productive enough to support one. The Government, on the other hand, was in one way or another aiding both projects, if it did not indeed promote either or both projects." However, the companies could not have expanded and overbuilt, as it is claimed they have, had they not been extended Government credit.

Dealing with the question of receivership, Sir Henry L. Drayton and Mr. Acworth, in their report, say:

"We think the security holders of the companies have, to some extent, a moral claim on the Government. Their schemes of extension have been matters of public knowledge for many years. So far from discouraging them, the Government, both of the Dominion and of the Province, have, by subsidies and by guarantees, by loans and cash advances, encouraged them to go on. But there is more than this. The bonds and debentures of the Grand Trunk Pacific and Canadian Northern have been, in the main, placed through London and non-Canadian holders, and these holders, in subscribing, have unquestionably been influenced by the fact that the Companies were backed by the Canadian Government. Technically, of course, the Government is not responsible beyond that of meeting its own guarantees, but if the two companies went into the hands of receivers, we cannot doubt that investors outside Canada would believe, however erroneously, that the Dominion Government had treated them badly, and the result would be serious injury to the credit of the Canadian Government, and indeed of all Canadian enterprises. This result is one that, be it on pecuniary grounds alone, the Canadian people should, in their own interest, spend a good deal of money to avoid. We, therefore, consider that Canada should resume the responsibility of seeing that the interest on these securities is met."

At the present time the railways mentioned are not in a position to meet their obligations. The recommendation of the majority is that these should be met by the Government, and the properties taken over and managed under the conditions mentioned. The minority report suggests, that as these obligations were incurred under agreements between the Government and the private companies, that these agreements should be carried out, and that there should be a continuance of Government aid, and that based upon the recommendations, Government aid should be continued until the reorganization suggested has been fully consummated.

As regards the Grand Trunk, Mr. Smith says:

"It will be necessary to affect some compromise which will enable this company to continue."

He recommends a permanent Board of Trustees, consisting of two Government officials and three private citizens, to act for the Government in the reorganization suggested, and that the compromise with the Grand Trunk should be recommended by that Board. He further suggests that the Board of Trustees be charged with the duty of acting for the Government in all matters requiring new contracts, and shall protect the interests of the Government in every way in connection with the leasing, operating or financing of any properties under their care.

The problem is a most difficult one, and it would seem to resolve itself into a question as to which course should be adopted, namely, that of the majority report or, whether the identity of the properties which have come into existence by Government aid should be continued as at present.

AN EXHIBIT OF STRENGTH.

Bank of Montreal Shows Remarkable Expansion in Assets During Six Months.

The bank of Montreal statement for the half-year ending April 30, gives an excellent indication of how the leading financial institutions of Canada are progressing under war-time conditions. It is interesting to note that the Bank is to-day in a stronger position than it ever has been. The outstanding feature of the report is that there has been an increase of $21,000,000 in assets during the half-year. These now stand at $386,806,887, and of this total 77.16 per cent. represents liquid assets. Deposits gained $22,000,000.

A closer examination of this statement indicates that evidently, in its position as bankers for the Government, the Bank of Montreal has been largely identified with government war loans and special business and, at the same time, has handled a very considerable amount of the munition business of the country. This condition is shown by an increase of over $10,000,000 in Dominion notes, a gain of approximately $7,000,000 in British securities and the maintenance of the circulation of the Bank at over $21,000,000, which is close to record levels.

Ever since the outbreak of the European war, the Bank of Montreal has strongly advocated a policy of caution, and has set an example by keeping its powder dry, with a view of being prepared for all contingencies. With the unprecedented financial conditions prevailing throughout the world, it has been impossible to forecast just what conditions might prevail from time to time, and with the war underway for almost three years, it must be admitted that this condition prevails to an even greater extent to-day. Of course, with the position which the Bank occupies, such a policy is of just as great benefit to the Dominion as it is to the bank itself. On this account there must, necessarily, be a certain amount of satisfaction that Canada is pulling through the war period in such a satisfactory manner.

It has been felt that Canada's record overseas and the enormous wheat crops the country has delivered to the Allies would mean considerable immigration to this country after the war. At the same time, the strength shown by the Bank of Montreal will lend confidence in the investment of capital in the Dominion, and will indicate just how well the country has been able to look after its own.

PAPER PULP FROM ELEPHANT GRASS.

A novel announcement has been received from the Publicity Department of the Uganda Railway that is worthy of more than passing attention. It is printed on paper which has actually been made from the elephant grass which grows in such abundance in British East Africa and Uganda, and experts to whom the paper has been submitted declare that the quality is excellent. In view of the great shortage of pulp from which paper is made, the announcement in question means the ultimate establishment of a paper pulp industry in British East Africa. The same elephant grass grows in great profusion in India, and steps are being taken to utilize it for the benefit of harried publishers, who are now at their wits' end to obtain their normal paper supplies with which to "keep going."—*British and South Africa Export Gazette* (London).

Imperial Bank of Canada

Forty-Second Annual Meeting of the Shareholders

Held at the Head Office, Toronto, Wednesday, May 23rd, 1917, at 12 Noon.

The Forty-second Annual General Meeting of the Imperial Bank of Canada was held, in pursuance of the terms of the Charter, at the Banking House of the Institution, 23rd May, 1917.

The following were present: Hon. Thomas Crawford, A. A. Thompson, J. C. Moore, Major Keefer, Peleg Howland, F. Arnoldi, K.C., R. W. Thompson, Elias Rogers, E. H. Gooch, G. T. Shelby, J. W. Woods, J. K. Fisken, D. S. Cassels, W. G. Cassels, Richard Tew, Col. Michie, W. J. Gage, J. W. Bain, K.C., H. Vigeon, W. H. Lamont, G. G. LeMesurier, Jas. Scott, J. F. MacKay, Hon. Richard Turner (Quebec), R. Ross, W. J. Barr, J. C. Black, R. Carswell, W. H. Knowlton, O. F. Rice, W. A. Mitchell, Thos. E. Knowlton, Thomas Long, V. H. E. Hutcheson, Miss Hughes, S. Jeffrey, D. W. Hughes, J. W. Beatty, W. Crocker, L. A. Hamilton, F. Russell, W. Moffat, A. E. Phipps (Winnipeg), Dr. F. Beemer, John Watt, G. C. Brown (Welland), J. A. Richardson (Montreal), George Pattinson, E. Roche, N. Robertson, W. J. McWhinney, K.C., E. S. Houston (Ottawa), W. B. Powell (Galt), B. Pontifex, W. R. Brock, M. Morris (Woodstock), A. H. Seguin (Cobalt), A. W. Ballantyne, Frank Ford, K.C. (Edmonton), C. M. Cripton, J. G. Ramsey, G. T. Clarkson, R. J. Dilworth, Cawthra Mulock, W. B. Meikle, John Northway, A. P. Burritt, G. D. Boulton, R. S. Clark, W. S. Elliott, J. H. Rolph (Port Colborne), J. M. Lay (Vancouver), W. Bourke (North Bay), G. A. Morrow, Dr. O'Reilly, W. Frances, F. A. Prime.

THE REPORT

The Directors beg to present to the Shareholders the Forty-second Annual Report and Balance Sheet of the affairs of the Bank as on 30th April, 1917, accompanied by statement of Profit and Loss Account, giving the result of the operations for the year.

The balance at credit of Profit and Loss Account carried forward from last year was	$1,089,656.29
The net profit for the year, after making provision for bad and doubtful debts, and for rebate on unmatured bills under discount amounted to	1,122,818.67
Making a total at credit of Profit and Loss of	$2,212,474.96

This amount has been applied as follows:

Dividend at the rate of 12 per cent. per annum	$840,000.00
Annual Contribution to Officers' Pension and Guarantee Funds	7,500.00
Contributions to Patriotic and other War Funds	27,500.00
War Tax on Bank Note Circulation	67,598.76
Auditors' Fees	5,000.00
Contingent Appropriation to cover depreciation in Bonds and Debentures	100,000.00
Balance of Account carried forward	1,164,876 20
	$2,212,474.96

Branches of the Bank have been opened during the year at Iroquois Falls and Mount Dennis, Ontario; at Denholm, Laird, McLean, Pilot Butte, Ruddell and Springwater, Saskatchewan, and at New Norway and Peace River, Alberta. One branch has been closed—namely, North End Edmonton, Alberta.

The Head Office and Branches of the Bank, now numbering 128, have been carefully inspected during the year. The Auditors appointed by the Shareholders have also made their examinations as required by the Bank Act, and their report and certificate is attached to the Balance Sheet.

A further subscription of $25,000 has been made to the Canadian Patriotic Fund, and will be required during the course of the year.

The Directors have much pleasure in testifying to the loyalty, faithfulness and efficiency of the staff.

All of which is respectfully submitted.

PELEG HOWLAND, President.

LIABILITIES.

Notes of the Bank in circulation		$7,656,914.00
Deposits not bearing interest	$14,845,206.16	
Deposits bearing interest, including interest accrued to date of Statement	51,354,075.12	
		66,199,281.22
Balances due to other Banks in Canada	$276,910.47	
Due to Banks and Banking Correspondents in the United Kingdom	1,487.10	
Deposits by and Balances due to Banks elsewhere than in Canada and the United Kingdom	1,208,659.35	
Acceptances under Letters of Credit (as per contra)	57,600.00	
		1,544,656.92
Total Liabilities to the public		$75,400,852.14
Capital Stock paid in		7,000,000.00
Reserve Fund Account	$7,000,000.00	
Dividend No. 107 (payable 1st May, 1917) for three months, at the rate of 12 per cent. per annum	210,000.00	
Balance of Profit and Loss Account carried forward	1,164,876.20	
		8,374,876.20
		$90,775,728.34

ASSETS.

Current Coin held by the Bank	$1,621,742.57	
Dominion Government Notes	9,885,832.00	
		$11,507,574.57
Deposit in the Central Gold Reserve		1,000,000.00
Deposit with the Minister for the purposes of the Circulation Fund		348,495.33
Notes of other Banks		905,817.00
Cheques on other Banks		4,129,209.19
Balances due by other Banks in Canada		376,621.51
Due from Banks and Banking Correspondents in the United Kingdom		2,078,811.63
Due from Banks and Banking Correspondents elsewhere than in Canada and the United Kingdom.		1,858,167.68
		$22,204,696.91
Dominion and Provincial Government Securities, not exceeding market value	$5,752,872.38	
Canadian Municipal Securities and British, Foreign and Colonial Public Securities other than Canadian	8,215,437.34	
Railway and other Bonds, Debentures and Stocks, not exceeding market value	898,582.85	
		14,866,892.57
Loans to Provincial Governments	$28,885.52	
Loans to Cities, Towns, Municipalities and School Districts	4,510,792.69	
Call and Short Loans (not exceeding thirty days) in Canada on Bonds, Debentures and Stocks	3,900,248.45	
		8,439,926.66
		$45,511,516.14
Other Current Loans and Discounts in Canada (less rebate of interest)		41,192,420.77
Liabilities of Customers under Letters of Credit (as per contra)		57,600.00
Overdue Debts (estimated loss provided for)		237,911.04
Real Estate (other than Bank premises)		389,102.55
Mortgages on Real Estate sold by the Bank		450,284.37
Bank Premises, at not more than cost, less amounts written off		2,908,083.47
Other Assets, not included in the foregoing		28,810.00
		$90,775,728.34

PELEG HOWLAND, President. E. HAY, General Manager.

AUDITORS' REPORT TO SHAREHOLDERS.

We have compared the above Balance Sheet with the books and accounts at the Chief Office of Imperial Bank of Canada and with the certified returns received from its branches, and after checking the cash and verifying the securities at the Chief Office and certain of the principal Branches on 30th April, 1917, we certify that in our opinion such Balance Sheet exhibits a true and correct view of the Bank's affairs according to the best of our information, the explanations given to us and as shown by the books of the Bank.

In addition to the examinations mentioned, the cash and securities at the Chief Office and certain of the principal Branches were checked and verified by us during the year, and found to be in accord with the books of the Bank.

All information and explanations required have been given to us, and all transactions of the Bank which have come under our notice have, in our opinion, been within the powers of the Bank.

G. T. CLARKSON, F.C.A.,
R. J. DILWORTH, F.C.A.,
of Clarkson, Gordon & Dilworth.

THE PRESIDENT'S ADDRESS.

While the year just past has been one of much anxiety, your directors meet you to-day with some satisfaction, for the management is able to show a considerable increase in the earnings of the Bank. As you will see, after paying dividends and making the usual provisions, and also putting aside a sum to cover depreciation in securities, our Profit and Loss Account balance has been considerably augmented.

When we last met together there were a few of us, I venture to say, who thought we would still be at war at this date, and now the end seems as far off as ever, with the added anxiety of the uncertainty of happenings in Russia and the increased submarine peril, an anxiety tempered by the entrance of the United States into the war.

Without doubt our prosperity (unstable though it is) is due to the continuation of the awful struggle. Much of the profit that is accruing to the community would appear to be due to the constant rise in the price levels of almost every conceivable commodity consumed or desired by man. As to what are the causes that lead to these advances even on materials, of which there is an apparent abundance, I will not venture an opinion; suffice it to say that there seems to be an infection in the air that compels the feeling that delay in providing for present or future needs is dangerous; under such conditions the saving of money, which is being so strongly advocated, is not likely to be made even by the thrifty.

I make this reference because the inflated conditions existing compels the use of additional money in the conduct of business which the Banks are being called upon to supply. These calls, in addition to the needs of the Government, either direct or indirect, are beginning to tax the resources of the Banks, and must lead to higher rates of interest on borrowed money. In our own case we may be compelled to make use of a larger proportion of our reserves than we would under ordinary circumstances think desirable, and which, perhaps, can only be excused by our Government, or rather our country's, needs. It is, of course, quite true that a state of things such as I have mentioned means increased earnings for us, and would in that respect be a source of satisfaction, if it did not also bring about a reduction in the apparent value of securities, even of the highest class, which reduction will have to be provided for out of these earnings, as has already been the case to a certain extent in the past year.

All things considered, therefore, is it not wise that the business community, using the term in its broadest sense, should resist all temptation to expand or make capital outlays even at the cost of some prospective profit? The war may go on for a long time, but it may end soon and suddenly, with conditions impossible to foresee, but which we cannot hope will be, immediately, good.

Branch Reports Good.

Our Branches have sent in their usual reports. They are, generally speaking, optimistic. It is true that the season is backward, but it would seem as if there would be no reduction in the acreage under crop, except in wheat, but other grains are being sown in its stead. Shortage of labor is not complained of everywhere by the farming community, and in any case it does not seem to have affected seeding to a great extent. It is to be hoped that Providence will be kind and the yield good. If Providence is kind and half the amateur effort is made that is being urged there will be more garden stuff in this particular vicinity than will be consumed.

A Review of Conditions.

I will not burden you with figures, but think it well to mention that the Bank Clearings this year, so far, have increased enormously over last, reflecting, in part at least, the inflated conditions. Building permits show some increase; it is difficult to decide the cause. Railway receipts have grown. The number of immigrants, while small compared with former years, have increased somewhat over last year, nearly all coming from the United States. The entry of that country into the war, with the resultant debt and taxation, and the recent regulation regarding free wheat, must, I think, aid us in the future in obtaining American settlers. About a hundred thousand soldiers have been added to our army during the past year, and about one hundred and fifty thousand have been sent abroad to join their comrades, but, alas, ninety thousand casualties have occurred since the war began, and of these more than twenty-six thousand are dead—a heavy toll. Our foreign trade has grown enormously, with a balance still largely in our favor. The effect of this is, however, it seems to me, largely nullified by credits granted the Mother Country. Our debt has of necessity grown enormously, and is increasing at the rate of probably three-quarters of a million a day, and it is only reasonable to expect that we must soon begin to feel the effect of the burden. It will, I am sure, be cheerfully borne.

New Branches Opened.

Turning to our own immediate affairs, it will be noted from the report that several small branches have been opened. We have reason to expect that these will very quickly become self-sustaining, with perhaps the exception of the one at Peace River, which has more the character of a pioneer post, but from which eventually good results are anticipated.

We have also secured properties at, it is thought, reasonable values in Vancouver, Windsor, and the corner of King Street and Spadina Avenue, Toronto. Two of these are yielding revenue, where, it is expected, we will erect our own offices when the opportune time arives.

In Aurora the business of J. M. Walton & Co., private bankers, has been purchased, with an improved effect on our business at that point.

I am sure you will approve of the further subscription to the Patriotic Fund referred to in the Report, and which will be paid out during this year.

I am sorry that our senior director, Mr. Ramsay, is not with us this year. It is the first time he has missed this meeting within my recollection. While recently ill, he writes that he is now quite fit, but that the sailings of steamships for America are so uncertain that he decided not to venture. Dr. Merritt is still attending to his military hospital duties in England, and is in consequence absent.

A very large number of our staff have enlisted and gone overseas (Mr. Hay will give you particulars), and a large number of them, I regret to say, will not return. It has again been a hard, self-sacrificing year for those remaining, and I once more am glad to bear testimony to their loyalty and zeal.

I beg to move the adoption of the Report, and will ask Mr. Rogers to second the motion.

VICE-PRESIDENT'S ADDRESS.

In seconding the adoption of the report there is no occasion for me to refer to the statement, as the figures shown speak eloquently for themselves, and our long experienced General Manager will no doubt explain any details you may wish to know which may not have been covered by the report itself, or by the President's address.

I think I am naturally inclined to be cautious. Perhaps that is owing to my early training on the farm, where all the bad horses about the place were given me to break in. I have ridden all kinds from the worst broncho of the West to some of the most tricky thoroughbreds of the East, and although I have had some tumbles, that and other experiences must have developed a sense of caution which I have found valuable in business. At the same time the experiences I have passed through have given me freedom from any sense of fear, or else I was born that way. I have no criticism to offer regarding what the President has said, but at the same time I want to say I have the fullest confidence that not only will this worst of all catastrophes ever known end in victory for the Allies, but that the peoples of the world will come out of it much better, as gold tried in the fire, and that this Canada of ours, also this Bank, will have a great future.

Farm Sources of Wealth.

The farm is the chief source of wealth. We have now three transcontinental railways with branches running through thousands of miles of the very best undeveloped agricultural land in the world. In the natural course of things, these must attract immigration. The products of the farm are now commanding the highest prices ever known, and in my opinion, even after the end of the war, high prices for foodstuffs must continue to prevail. With the mechanical appliances now available for farm work, the farmer needs no considerable supply of extra capital, but should be helped to the extent needed upon good security. The food supply of the world is short, the demand is likely to increase rather than decrease. Development of mines, extension of factories and the reconstruction of devastated Europe must all call for food supplies for the workers. On the whole, the farmer has been helped rather than hurt by this war, and will continue to be so, at least for a long time to come.

Great changes must necessarily take place as the aftermath of the war, and in the meantime there can be no question as to the wisdom of economy in all directions. One common factor wil enter into any adjustment after peace has been concluded, and that is the relation of the supply of capital to its demand, and the supply of labor working in harmony with capital. Capital and labor are dependent on each other. The tendency in modern times, unfortunately, has been for capital to use labor too much as a machine.

Capital and Labor.

In my opinion it would be in the interests of all concerned for capital, which is essential to the development of all enterprises, to take labor, which is equally essential, into its full confidence, each receiving a fair return for that which it gives. Capital is necessary in connection with banking, but apart from that banking is simply a system of credit. Mr. Henry Dunning McLeod, one of the highest authorities on credit, says: "A solid system of credit, by which I mean credits on debts which are punctually redeemed at maturity, is the most ingenious and powerful method ever devised by the ingenuity of man for promoting and developing national wealth." Daniel Webster says: "Credit has done more a thousand times to enrich nations than all the mines of the world." To obtain credit there must, or should be, the ability to pay, and the honest intention to pay. The credit of Canada is good, and although the load of debt is growing heavier every day in this, as in every other belligerent country, we must all admit that its financial problems have been wisely handled, and I trust that its credit will continue to grow still stronger with the progress of time.

The Imperial Bank has long been one of the leading banking institutions of Canada, and for its continued successful growth the highest praise is due to its efficient staff. The Board of Directors is necessary to direct the general policy of a Bank, but the responsibility of the real work rests upon the management and official staff.

I have much pleasure in seconding the adoption of the Report.

GENERAL MANAGER'S REMARKS.

As requested by the President, I have pleasure in pointing out and commenting upon the special features of the balance sheet now presented to you.

While our actual cash holdings of $22,204,696.91 are only very slightly in excess of the amount held a year ago, you will note a material increase from $10,751,581.96 to $14,866,892.57 in our "Second Line Reserves," which include Dominion, Provincial and British Government securities, and which are readily convertible into cash. This increase is represented very largely by short term Government loans for the purchase of munitions and other war supplies.

Balances maintained in foreign countries have decreased during the year from $6,352,289.15 to $1,858,167.68. In view of the very large demands of our borrowing customers and the fact that we are able to keep our funds well employed at home we have reduced our balances abroad by the substantial figure indicated, about $4,500,000.

Municipal Loans show a decrease during the year of practically $2,000,000, which is accounted for by the practice of economy and the curtailment of expenditures by municipalities generally. This is as it should be in times like these, and I might say that in our opinion some of our Canadian municipalities should retrench still further.

Call and Short Term Loans show a reduction from $4,127,322.78 to $3,900,248.45, roughly $200,000. While the decrease is not large, I would point out that a large proportion of the present loans is represented by advances to customers to assist in the purchase of War Loan Bonds.

The substantial increase in current loans and discounts, now amounting to $41,192,000 odd, as compared with $34,646,000 a year ago, is due to a general expansion in our commercial business and the present high cost of all commodities.

Bank Premises Account during the year has increased from $2,621,000 to $2,908,000. The expenditures in this connection have been conservative, and advisedly made in obtaining desirable sites at reasonable prices. Our policy is, as far as practicable, to own the premises required for the Bank's own business at places where we are satisfied we are permanently established, and where advantageous leases are not procurable.

Altogether you will note an increase of $9,000,000 in assets during the year.

Turning to the other side of the balance sheet—liabilities—you will observe the amount of notes of the bank in circulation has, in common with other banks, considerably increased during the year just closed; in fact I might say that the maximum during the year reached the figure of $8,465,716, the largest in the history of the Bank. The amendments to the Bank Act, providing for emergency circulation, as it has been termed, are working out satisfactorily, and to enable us to take advantage of the opportunity afforded by this legislation to increase our circulation, we have deposited with the Central Gold Reserves various sums from time to time, the amount so deposited at present amounting to $1,000,000.

Deposits Increased.

Deposits not bearing interest have increased by approximately $3,600,000, from $11,253,426.11 to $14,845,206.10. Interest-bearing deposits have shown almost as large an increase, the amount last year being $48,965,201.86, while this year we have reached the sum of $51,354,075.12. This growth, representing a total increase in deposits of $6,000,000, we regard as satisfactory—particularly so when we consider the large withdrawals for investment in war loan issues and such like interest-bearing securities yielding higher rates of interest.

You will note that our foreign correspondents' balances with us now, amounting to $1,208,659.35, show a substantial increase. With the high rates of exchange prevailing, no doubt it suits our correspondents to leave these funds, representing chiefly proceeds of collections, on deposit with us, pending a return of exchange rates to normal.

The number of individual shareholders of the bank's stock consistently continues to grow. There are now 1,879 shareholders as compared with 1,804 a year ago.

New Branches—Although for the past two or three years' time our policy has not been one of expansion in the way of new branches, you will have noted from the report that we have during the past year established ourselves at half a dozen rural points in the Province of Saskatchewan and at two points in Alberta. I might say that these expansions have been with a view to the future and to extending our facilities in fields in which we have for some time been represented; for instance, the branches at Denholm and Ruddell are in the immediate vicinity of North Battleford, where we have had a branch for some ten or twelve years. In the Province of Alberta we have large interests also and have opened a branch at Peace River, which is some 270 miles northwest of Edmonton, where considerable development has already taken place and it is expected will continue.

In replying to the shareholders' motion of thanks to the staff the General Manager said: The number of men on the staff of the bank at the outbreak of the war was 875, of whom 834 were of an age eligible for military service. Out of this enrolment 300 men, which is equal to 36 per cent., have volunteered and have enlisted for military and naval service. In addition to these some 85 youths who were appointed to the staff since the commencement of the war have given up their positions to join the colors, in all 385 of the bank's employees, of whom I regret to have to report as many as 27 have been killed in action, 40 others wounded, three taken prisoners and three recently reported missing. We have now a total staff of 950, and of this number 300 are ladies. This means that the positions of more than 50 per cent. of those who have enlisted are now being filled by ladies and it affords me pleasure to be able to say that they are performing their duties quite satisfactorily.

The customary motions were made and carried unanimously.

Mr. G. T. Clarkson, F.C.A., Toronto, and Mr. R. J. Dilworth, F.C.A., Toronto, were appointed Auditors of the Bank for the ensuing year.

The Scrutineers appointed at the meeting reported the following Shareholders duly elected Directors for the ensuing year: Messrs. Peleg Howland, Elias Rogers, William Ramsay (of Bowland, Stow, Scotland), Cawthra Mulock, Hon. Richard Turner (Quebec), William Hamilton Merritt, M.D. (St. Catharines), W. J. Gage, Sir Jas. A. M. Aikins, K.C. (Winnipeg), Hon. W. J. Hanna, M.P.P., John Northway, J. F. Michie, J. W. Woods.

At a subsequent meeting of the Directors, Mr. Peleg Howland was re-elected President, and Mr. Elias Rogers Vice-President for the ensuing year.

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

847. Agency.—A well-known Calgary man, who has a good connection with a hardware and farm implement trade, is desirous of getting in touch with Eastern manufacturers with a view to representing them in Calgary and the surrounding country in Alberta.

848. Cupola Blocks.—A Nova Scotia company desires to get in touch with Canadian manufacturers of blocks suitable for lining cupolas.

849. Cartons.—An Ontario plumbers' supply manufacturer wants to get in touch with manufacturers of cartons made from tough, yet flexible board about .025 to .030 of an inch in thickness.

850. Gasoline Tractors.—A party intending to take up farming in the West on a rather extensive scale would like to hear from Canadian manufacturers of gasoline farm tractors.

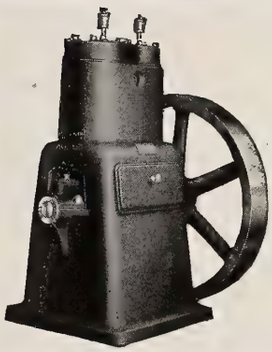
851. Chicory.—A well-known New Brunswick house is desirous of getting in touch with Canadian producers and curers of chicory.

EXPORT TRADE ENQUIRIES.

852. Dental and Massage Cream.—A New York State house desires to hear from Canadian manufacturers who can supply dental cream, cold cream and massage cream in bulk.

853. Agency.—A commission agent in Boston, having connections in China, Russia, India and Africa, mainly, is desirous of communicating with firms who would like to have a representative in any of these countries. He is also in a position to supply raw materials coming from those countries.

854. Vegetable Extract.—An English house, prepared to take large quantities, f.o.b. Montreal, cash against documents, would like to have quotations on liquid vegetable extract from Canadian producers.



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AIR COMPRESSORS

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T H-E

Yes, Labor is Scarce

Many manufacturers find labor supply fluctuates greatly from day to day—almost from shift to shift. In such cases the flexible Hydro current is especially useful, as it can be turned on or off from a department or a machine—at will. Use Hydro because it gives you "the best service—at cost."

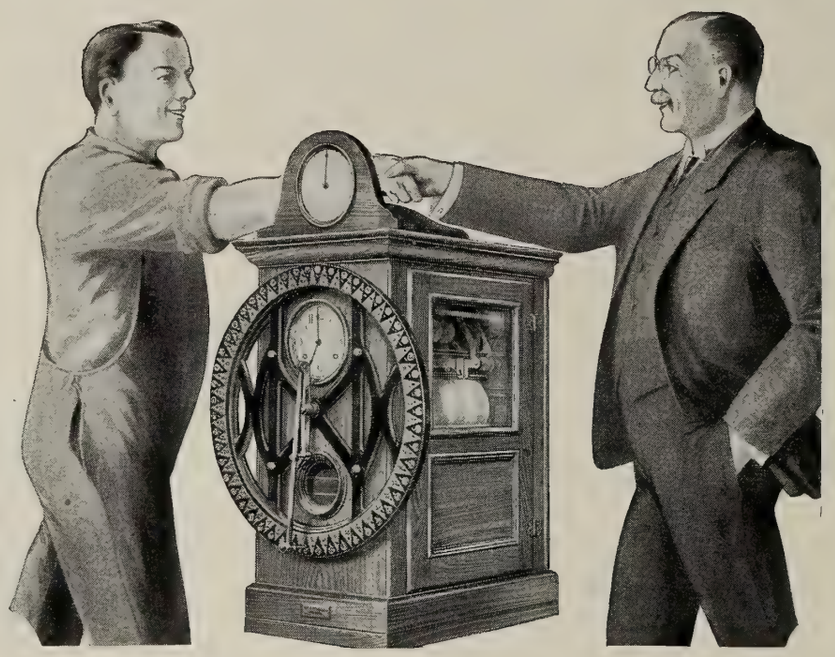
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Between your employees and your executive force is the great promoter of dividends. Cut out the disputes about working time. Cut out the human element in your time-recording system, and you're not far from real HARMONY in your plant.



INTERNATIONAL TIME RECORDERS

promote Harmony and govern the men, minutes and money that are the three great producing elements of your business. Can you use them? Probably you can. To find out, just fill in and mail this Form to-day. It will commit you to nothing.

Firm Name..... Address.....

Nature of Business .....

No. of Employees ..... No. of Males..... No. of Females .....

Working Time Schedule A.M. IN ..... A.M. OUT..... P.M. IN ..... P.M. OUT .....

What is your pay period (mark which one)? WEEKLY.... TWO-WEEKLY .... SEMI-MON..... MONTHLY ....

Do employees work overtime ..... If so, about what percentage? .....

Do you work night shifts ..... If so, state time schedule? .....

What is your average hourly rate?..... Do you penalize employees for tardiness? .....

Who compiles your pay-roll?..... How many office employees have you? ..... How many entrances to plant? .....

How many different buildings?..... What distance is it from the entrance to your farthest Dept. .....

It will interest you to find out just what we can do for you. It will do more—it will pay you. Write us to-day.

The International Time Recording Co. of Canada, Limited

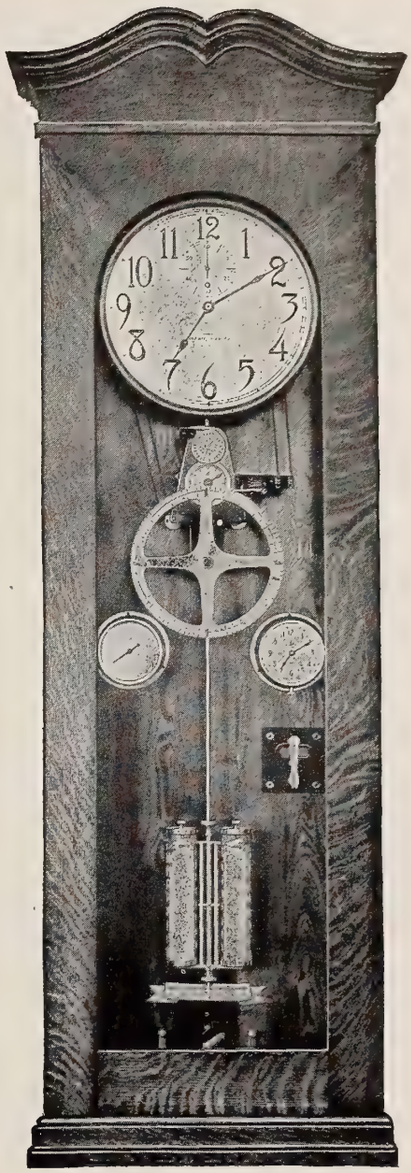
Anderson St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG: 400 Electric Railway Bldg.

VANCOUVER 305 Birks Building (Opposite C.P.R.).

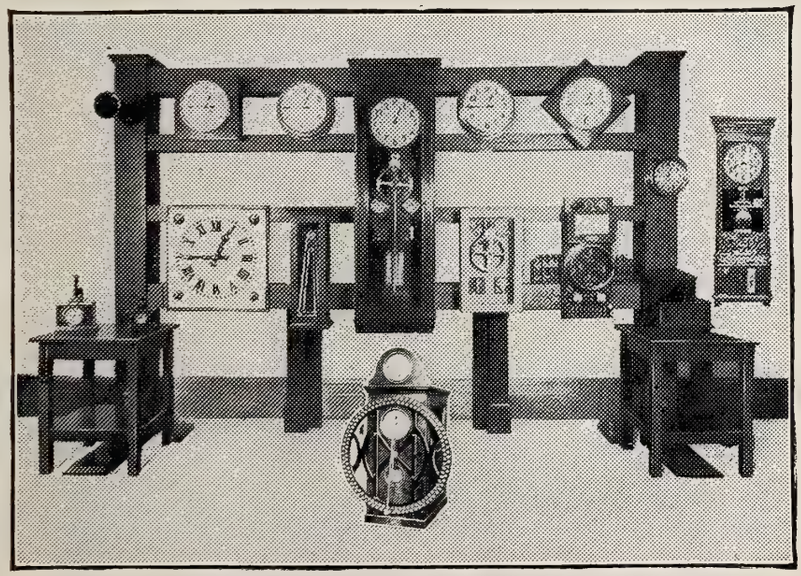
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THE MASTER CLOCK



A modern time-recording system demands that the clock time in each department be absolutely uniform. To ensure this the departmental clocks must be controlled by a high-grade Master Clock such as is manufactured by the International Time Recording Company.

The Master Clock will control by electricity not only each time piece in the plant, but also the In-and-Out-Time Recorders and any mechanical Cost Recorders. It will control a program device which automatically rings gongs in any or all departments at any hours set. This gong service is valuable because the employees are not then watching the clock when it comes "near" to stopping time, so they do not lose their stride in their work. This prevents a serious leak in production and thus the initial expense is quickly paid for.



An International Group—Electrically Operated

We are the largest manufacturers in the world of Time Recorders, Secondary Clocks, Cost Recorders, Master Clocks, Program Devices, Time Stamps and all Time Recording Devices.

Let us send you our latest Folders, very interesting indeed.

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One 100 k.v.a. 3-phase, 25 cycle, 550 volt alternator, 750 r.p.m. with two bearings, bedplate, direct coupled exciter, regulator belt pulley 24 inches dia. by 18 inches face, slide rails and foundation bolts.

One F.M. Rites patent, Ideal Engine, No. 1381, 14 inches by 14 inches, style S.E., 250 rev., built by Goldie & McCulloch.

Also marble panels equipped with oil switch, voltmeter and ammeter.

Apply to Getty & Scott, Limited, Galt, Ontario.

BUSINESS ASSOCIATE WANTED.

Man about 30, with engineering and commercial training, experienced in mine and smelter requirements, including structural and cast steel work. A man with office experience and capable of soliciting business preferable. Reply to Box 42, INDUSTRIAL CANADA, Toronto.

855. Agency.—A commission agent in Panama would like to hear from Canadian manufacturers desiring representation in that country.

856. Leather and Findings.—A leather merchant and shoe manufacturer in India would like to get in touch with firms able to supply him with leather and findings for the manufacture of boots and shoes.

4004.-857. Automobile Tires and Accessories.—Importers in New Zealand with paid-up capital in excess of $125,000, reported punctual in all payments and with excellent reputation, referring to principal banks, will be glad to hear from manufacturers in the automobile tire and accessory line not represented in New Zealand.

4007.-858. Sausage Casings.—Reliable agent in Spain wishes to receive offers in the Spanish language from exporters of sausage casings, which he is willing to purchase for his own account.

4009.-859. Engineers' Requisites, Paints, Lubricating Oils, Packing and Belting.—Manufacturers' agents in Australia wish to receive direct offers from manufacturers in the lines mentioned, also on varnishes and petroleum products.

4010.-860. Garden Tools and Implements.—Russian customer of an American concern would like to get in touch with manufacturers of garden tools and implements.

4014.-861. Wheat Flour Mill.—Dealer in Nicaragua is interested in purchasing a mill for grinding wheat flour and solicits direct offers from manufacturers, in the Spanish language.

4017.-862. Belting for Sewing Machines.—General commission agent in Egypt wishes to receive offers and samples of driving belt of good quality for sewing machines, 5½ millimeters thickness, quotations for which should be per 100 metres. Offers should be made in the French language.

4052.-863. Paper, Oils, Chemicals, Etc.—Exporters and importers in China with head office in London and branch offices at Shanghai, Tientsin, Hankow, Peking, are interested in hearing from manufacturers only of the better-class qualities of wrapping paper, packing paper, foolscap and other classes of paper, various kinds of oils, chemicals, etc., full lists of which are on file at this office. This firm desires samples and price lists and quotations c.i.f. Tientsin, and further would like to know what stocks are obtainable.

CANADIAN WOOL COMMISSION

At a meeting held in Ottawa on the 19th of April, 1917, the Canadian Wool Commission was appointed and has received the approval of the Government.

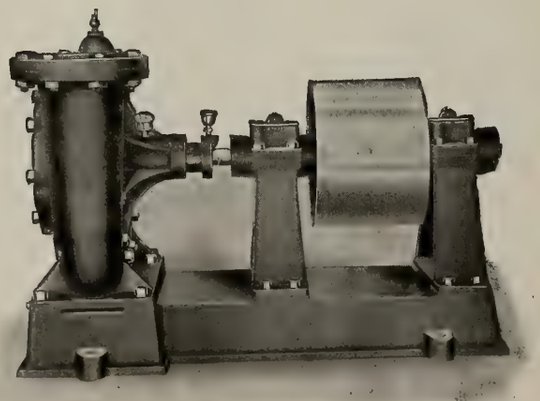
It will collect information and advise regarding the granting of licenses for the export of the wool from Australia and New Zealand that has been allocated to Canada by the British Government. Manufacturers and dealers interested are requested to communicate with Mr. H. Hodgson, Secretary, Canadian Wool Commission, Canadian Manufacturers Association, Toronto, from whom application papers can be obtained. Early attention is necessary.

May 29, 1917.

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Tinning Flux
Zinc Chloride
Ammonia Chloride (Sal Ammoniac)
Silicate of Soda

Bicarbonate of Soda
Caustic Soda
Hypo Sulphite of Soda
Sulphide of Soda (all forms)
Bi-Sulphite of Soda
Soda Ash
Chloride of Lime
Calcium Chloride
Epsom Salt

Bi-Sulphate of Soda (Nitre Cake)
Magnesium Chloride
Phosphate of Soda
Copperas (Crystal and Sugar)
Bi-Chromate of Soda
Sulphate of Alumina
Tri-Sodium Phosphate
Titanium Oxalate

Acetate of Lead (all forms)
Lithopone
Logwood
Logwood 51' for cotton
Hematine Crystals
Fustic (all forms)
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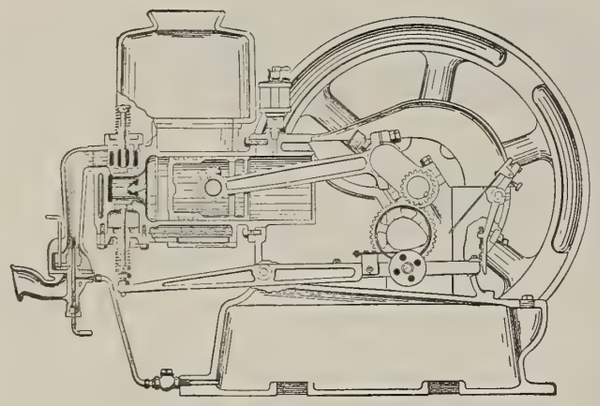
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THESE Engines represent the very best type of Gasoline Engine construction. They have been developed to their high state of efficiency by those whose life work has been the designing and building of gasoline engines.

Their high efficiency, coupled with their economy of operation and durability, combine to make Massey-Harris Engines, without exception, the most reliable and satisfactory on the market to-day.

Made in a wide range of sizes, from 1½ to 20 horsepower, stationary or portable, hopper jacket or closed jacket.

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Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Calgary.

The Alberta Milling Company plans erection of flour mill.

Cardston.

The erection of a canning factory is planned. O. D. Weeks, E. W. Barer and Mr. Cox are interested.

Didsbury.

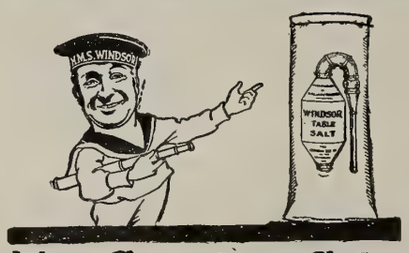
The Carlyle Dairy Co., 228 Fifth Ave. S., Calgary, are erecting a $10,000 frame creamery.

Lethbridge.

An addition is being made to the Lethbridge Macaroni factory to cost $1,000.

Owing to a revival in building operations in the district the Lethbridge Brick and Terra Cotta Co. are to shortly resume operations after being shut down for two years.

The Ellison Milling Company plan an elevator to cost between $100,000 and $150,000.



The Canadian Salt Without a Fault

If you wish to impress on a customer the fact that some one article in your store is pure, you can't make a stronger comparison than to say, "It is as pure as Windsor Salt."

Windsor Salt has probably been used in her home for years.

Windsor Table Salt

Made in Canada

THE CANADIAN SALT CO, LIMITED

STRUCTURAL STEEL WORK OF EVERY DESCRIPTION.

BUILDINGS BRIDGES PENSTOCKS ROOF TRUSSES COLUMNS, ETC.

TANKS

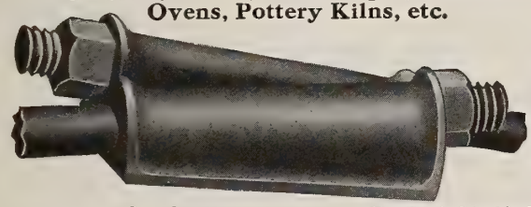


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Main Plant of MACKINNON, HOLMES & CO., LIMITED, SHERBROOKE, QUE.

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On Silos, Tanks, Water Pipes, Penstocks Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods ⅝ to 1½ inch Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

OTTERVILLE MFG. CO., LIMITED
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EXPORTERS OF
Reed Organs, Piano Stools,
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Catalogue B.

The Goderich Organ Co. Limited
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Closet Seats,
Flush Tanks,
Medicine Cabinets,
Everything for the Bathroom.
Write for Catalogue C and Price List.

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SELECT WHITE MIXED COLORED
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Anything in Black or Galvanized Sheet Metal up to ⅛ thickness. Send blue print or rough drawing and get our prices.

Sheet Steel Sundries for manufacturers is one of our specialties.

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The Steel Trough and Machine Co. Limited
TWEED, ONT., CANADA

BRITISH COLUMBIA.

Dennison Road.

Fir Tree Lumber Company, Fraser Valley, plan electric sawmill.

Port Mellon.

H. S. Clements, M.M.P., Comox, contemplates the erection of a pulp plant to cost about $2,000,000.

Vancouver.

The Colonial Pulp and Paper Mills have awarded contract for their pumping equipment.

The plant of the Phoenix Iron Works, Limited, 154 Alexander Street, was damaged by fire to the extent of $30,000.

Dewar Shingle Company will erect plant on False Creek. Estimated cost is $2,500.

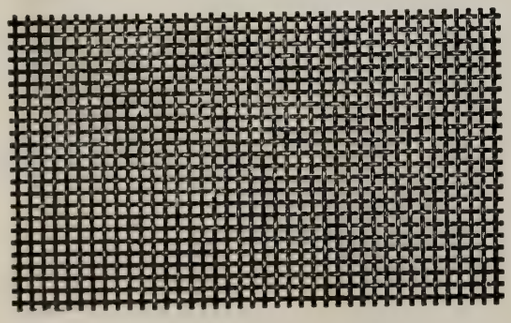
The Whalen Pulp & Paper Mills, Limited, Merchants Bank Building, Vancouver, have just been organized, and will at once start operations. Three companies have been taken over—the Sulphite Fibre Mill at Mill Creek, Howe Sound; the Empire Pulp and Paper Mills, Ltd., Swanson Bay, and the Colonial Lumber and Paper Mills, Quatsino, Vancouver Island.

Victoria.

The formation of a new shipbuilding company for Victoria, capitalized for initial purposes at $500,000, was recently announced at a meeting of the Board of Trade by James A. Griffith.

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All grades of Wire Cloth, Double Crimped.
Screening Accuracy Guaranteed.
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Mean fast and accurate work

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and have produced a HACK SAW BLADE that will give unequalled service on this material in HIGH-SPEED MACHINES

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AND

Maple Butter

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TORONTO CANADA

MANITOBA.

Brandon.

Fire damaged the plant of the Manitoba Engines, Limited, to the extent of between $3,000 and $4,000. Fully insured.

Winnipeg.

Plans and specifications are with the engineer, care of Canadian Bag Co., Limited, 831 Henry Ave., who is receiving tenders for a $35,000 mill and brick factory addition.

Fire destroyed the greater part of the building and equipment of the Winnipeg Foundry Co., Limited, 115 Robinson St. Loss, $20,000; insurance, $4,000.

NEW BRUNSWICK.

St. John.

A large shipbuilding plant for the erection of steel vessels may be located here. This is a result of a recent visit here of Thomas S. Dickson, shipbuilder of Glasgow, Scotland, and A. D. Swan, of Montreal, noted expert on harbor development and authority on engineering projects.

NOVA SCOTIA.

Berwick.

Contract has been awarded for a factory to cost between $10,000 and $12,000 for the R. J. Graham Company.

ONTARIO.

Amherstburg.

Plans are being prepared for a sixteen-storey building for the Brunner-Mond Company, subsidiary of the Solvan Process Company, of Detroit. It is said that the building will be one of the largest in the country, devoted entirely to industrial purposes, and will cost in the neighborhood of $2,000,000.



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Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

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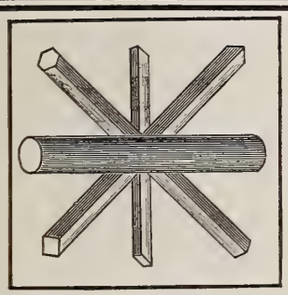
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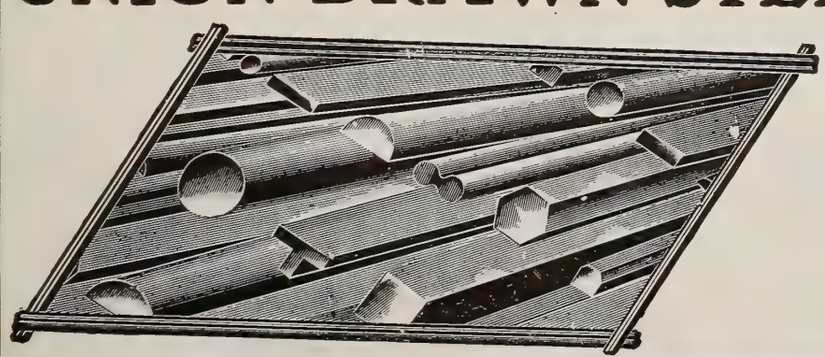
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THE cutting qualities of the "Famous Five" files may be compared to those of a sharp razor. They work with minimum effort and give maximum results.

In brief, they are efficient. Their qualities have become standardized; and the "Famous Five" file standard is recognized by mechanics, shop superintendents and purchasing agents everywhere.

Specify them when ordering.

They are:



Aylmer.

The Carnation Milk Products Company plan reinforced concrete addition to their factory.

Belleville.

The Graham Co., Limited, will rebuild their evaporator, recently destroyed by fire.

Chatham.

General contract has been awarded for a $5,000 brick factory addition for Dowsley Spring & Axle Company, 81 St. George Street.

Cottam.

General contract has been awarded for remodelling the factory of the Cottam Canning Company at a cost of $3,000.

Durham.

The plant of the National Portland Cement Company, which has been closed since June last, will be reopened.

Fletcher.

Plans are in progress for a $10,000 sorghum factory for Armstrong Brothers, who will be in the market for complete equipment.

Ford.

The Chalmers Motor Co., Limited, plan temporary factory building, costing $15,000. Manager, H. S. Lee.

General contract in connection with the erection of a $27,000 concrete and brick addition to factory of the Canadian Lamp and Stamping Company, Edna Street, has been awarded.

Hamilton.

The National Machinery Company, 72 Wellington St. W., plan factory.

The Canadian Drawn Steel Company will erect a $5,000 brick office building.

Contract has been awarded for a $10,000 addition to the factory of the National Paper Goods Company, Queen Street North.

The Canadian Westinghouse Company intend building three office buildings to cost $200,000.

General contract has been awarded for a $75,000 factory for the National Abrasive Company, head office, Boston, Mass.

J. R. Moodie and Sons, King Street East and Sanford Avenue, plan erection of a new factory.

Tenders will be received shortly for all trades in connection with the erection of a $25,000 brick addition to the factory of the Canadian Shovel and Tool Company, Imperial Street.

Harrow.

The Quality Canning Company plans the erection of a $25,000 brick and reinforced concrete factory.

Jordan Harbor.

Tenders addressed to H. F. McNaughton, Secretary Public Works Department, Parliament Buildings, Toronto, will be received for the building of a canning factory at the Experimental Fruit Station, Jordan Harbor.

Kincardine.

On May 15th a by-law was voted on by the ratepayers to provide $20,000 to assist J. B. Watson to establish a furniture factory.



We manufacture Babbitt Metal for every purpose.

Our XXX Genuine Arctic

is especially adapted for

Heavy Duty Work

such as Marine and Automobile Engines.

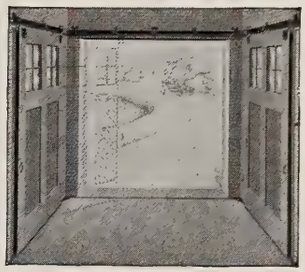
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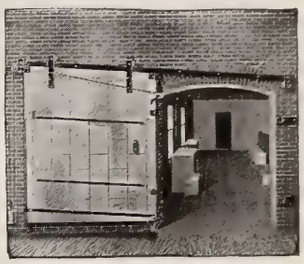
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BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

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DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO. ONT. CANADA

When writing advertisers, please mention INDUSTRIAL CANADA.

Leaside.

Work will be started shortly on an addition to the factory of the Canada Wire & Cable Company, 1170 Dundas Street, Toronto.

London.

General contract has been let for $20,000 addition to factory for Gorman Eckert Company, Rectory Street.

Steel Lockers, Limited, plan $25,000 factory.

Contract has been awarded for the erection of a $150,000 addition to the factory of the Ford Motor Company of Canada, Limited, head office, Ford City. The firm plans to install large coke ovens.

Penmans, Limited, Paris, Ontario, plan branch factory here.

Orillia.

Contract has been awarded for the erection of a brick machine shop for the E. Lond Manufacturing Company.

Owen Sound.

The plant of the Union Cement Company will be doubled in capacity this year. The present capitalization of the company, $200,000, is to be increased to $1,000,000, the additional amount being supplied by investment of Chicago capitalists.

Peterborough.

General contract has been awarded for a $500,000 plant for the Quaker Oats Company, head office, Railway Exchange Building, Chicago.

The agreement between the Quaker Oats Company, the Peterborough Hydraulic Power Company and the city has been approved by the City Council. The agreement provides for the construction by the city of an overhead bridge across the river at Hunter Street and the giving of the Quaker Oats Company a right-of-way for their tracks underneath the bridge. It also provides for the building of a bridge across the river from London to Hazlitt Street. The overhead bridge must be completed by December 31st, 1919, and the London Street bridge as soon after as it is possible.

Point Edward.

The Steel Company of Canada is having new concrete docks built at its ore docks here. The work will be carried out at a cost of about $20,000, and will greatly increase the efficiency of the docks.

Port Hope.

The Nicholson File Works propose to enlarge their plant, and have requested the Town Council to grant them a fixed assessment and build a footbridge across the Ganeraska River, on Wright Street, to connect with Martha Street.

Preston.

An addition is being built to the plant of the Solid Leather Shoe Company.

St. Catharines.

Tenders are in for a $35,000 brick factory for the St. Catharines Cartridge Case Company.

St. Mary's.

The Thames Quarry Company plan to rebuild crusher building recently destroyed by fire at a loss of $20,000. Complete new machinery will be required.

H. & D. Corrugated and Solid Fibre Board



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NOTICE

The following are the Factory Inspectors for the Province of Ontario:

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W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
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ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.

D. M. MEDCALF, Chief Inspector of Steam Boilers.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

W. C. McGHIE, Chairman of Board.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

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Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. CORRESPONDENCE INVITED.

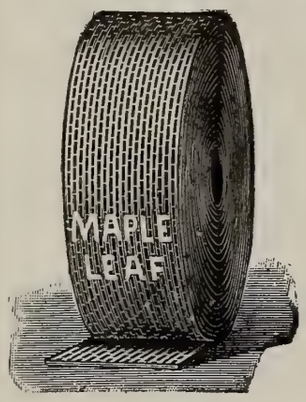
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"Maple Leaf" Brand Stitched Cotton Duck Belting

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HAMILTON, CANADA

Quebec Branch, 51 Duluth Building, Montreal

Simcoe.

Fire damaged the plant of the Dominion Canners, Limited, to the extent of $50,000.

Thorold.

The Exolon Plant plan $200,000 addition.

Tillsonburg.

The Tillsonburg Foundry & Machine Company plan to erect a $10,000 machine shop and install new equipment.

On May 14th the ratepayers voted favorably on a by-law to loan $10,000 to the Tillsonburg Foundry and Machine Co., Limited, to permit the company to enlarge their premises.

Toronto.

The Canada Pipe & Steel Company, 91 Church Street, will erect a warehouse on site of old building which is being wrecked.

Dominion Envelope Company, 90 Ontario Street, plan $125,000 mill and brick warehouse.

The Bawden Machine Company, 163 Sterling Road, are erecting a $3,000 brick addition to their factory.

Wettlaufer Brothers, manufacturers of concrete and contractors' machinery, plan the establishment of a branch plant in the Maritime Provinces.

General contract has been awarded for a $35,000 concrete plant for the Hoyt Metal Company, 356 Eastern Avenue.

The Canadian Auto Sales Company plans the erection of a brick and concrete auto factory.

McGregor & McIntyre, 1139 Shaw Street, have started work on a $12,000 crane runway.

633-661 EASTERN AVENUE



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The Largest Patent Leather Manufacturers in the British Empire

A. R. CLARKE & CO., LIMITED

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Cut of 60-inch "Extra" Double Belt
Made by The J. C. McLaren Belting Co., Limited.

WE ARE HEADQUARTERS FOR ALL KINDS OF

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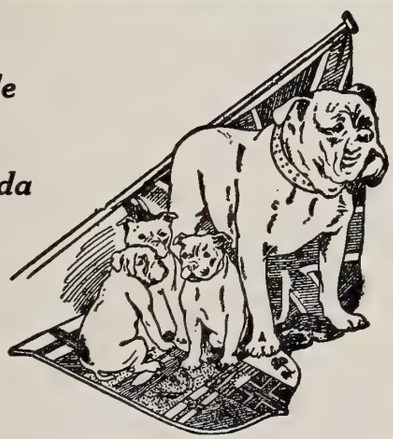
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"GENUINE OAK"
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BALATA BELTING
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TORONTO MONTREAL ST. JOHN, N.B.
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Engineer's Supply Co., 123 Bannatyne Ave. E., WINNIPEG

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Not Price Our Aim

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H. N. ROBERTS - Vice-President and Sec'y
GEO. C. ROBB - - - Chief Engineer
A. E. EDKINS - - Ass't Chief Engineer

Contracts have been awarded in connection with the erection of a $37,500 one-story brick storehouse for the American Radiator Company, Dominion Bank Building.

Fire damaged the plant of the John Inglis Co., Limited, Strachan Avenue, to the extent of $20,000.

The Military Hospitals Commission, 1 Queen's Park, will erect a factory for the manufacture of artificial limbs.

Welland.

Contracts have been awarded for a $40,000 electrode building for the Electro Metals, Limited.

Windsor.

It is stated that two new factories will be established in Windsor shortly. The Maxwell Motor Company have signified their intention of constructing a new plant on their site on McDougall Avenue. The building is to be of the reinforced concrete type of construction. Charles Mitchell also contemplates building an up-to-date brass and iron foundry.

Woodstock.

The Standard Tube & Fence Company, Drew Street, will build a $6,000 addition to their factory.

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PAPER SITUATION

Let us give you ten reasons why prices will advance.

No doubt your stock of everything in Paper and Stationery is at a minimum, for there has been a general feeling that prices would drop. However, we have studied the situation very carefully and arrived at the conclusion that with all raw materials advancing right along—Wood costing nearly $20.00 per cord against $4.00 as in pre-war days and wages advanced 50%—there are certain to be further large advances. Be wise and take advantage of our large stocks or favor us with your enquiries. We are agents for American Mills making all Papers such as, Genuine Parchment, Glassine, Filter and Insulating Papers, formerly made in Germany, also we are Pioneers of Canadian-made Kraft Wrappings, the most economical wrapper. Get particulars of Waterproof Papers and our Tufenuf Twine Reinforced Waterproof Paper, which replaces Burlap for all purposes to advantage; Barrel Heads, Heavy Bags, Brattice Cloth for mines, etc.

Mill Supply Dept.: Boiler Preservatives, Linings, Vul. Fibre.

BEVERIDGE PAPER CO., Limited *Pulp and Paper Mill Agents* **Montreal**

ALASKA

Follow the Gold Seekers' Trail



to this wonderful land of the north. Know the lure of its fjords, snow-capped mountains, blue-green glaciers, rivers and tumbling cascades, Indian villages and totem poles. Thrill with its awakening to a mighty commercial life.

Travel luxuriously by the splendidly appointed

Canadian Pacific "Princess" Liners

including the

S. S. Princess Charlotte

Sailing northward, 1,000 miles along the protected "inside passage."

Make your reservations early and secure choice accommodation.

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District Passenger Agent, Toronto.

Canadian Pacific Railway



Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Wyoming.

The Fibrois Garment Company, Port Huron, Mich., may erect a factory here for manufacturing sanitary specialties.

QUEBEC.

Chambly Canton.

Contract has been awarded for a $250,000 factory for the Canadian Leatherboard Company.

Maisonneuve.

The Eureka Toy Company plans erection of plant to cost $85,000.

The American Can Company, 120 Broadway, New York, contemplate the erection of a can factory. Tenders will likely be called this month.

Mont Laurier.

The Laurentian Water & Power Company have the general contract for $20,000 pulp mill for La Cie Generale de Pulpe, Visitation Street, Montreal.

Montreal.

In connection with the erection of their $400,000 engineering plant, the International Shipbuilding Corporation, 323 Transportation Building, are in the market for pig iron, steel, ship plates and general requirements for shipbuilding and repairing plant.

The Canadian Consolidated Rubber Co. have removed their executive offices, the sales department of their Montreal branch, and their raincoat manufacturing department to the Rubber Building, 201 Inspector Street.

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Auckland, Wellington, Lyttelton and Dunedin (New Zealand) and Melbourne and Sydney (Australia). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

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The New Zealand Shipping Co.

LIMITED

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Ask our rates.
A trial shipment will demonstrate the facilities we possess for giving COMPLETE SATISFACTION.

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LIVERPOOL SOUTHAMPTON
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NEW YORK
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Ship it Canadian Northern all the way

OPPORTUNITY!

North America will this year be the wheat bin for the world's wheatless millions.

The farmers of the vast fertile areas of the United States and Canada face great responsibilities and—opportunities. And this applies to Canada more than to the United States because of our small domestic requirements.

The manufacturers in Eastern Canada have in prospect a greatly-increased demand in all the goods Eastern Canadians produce for Western Canadians.

The transcontinental system of the Canadian Northern Railway connects the chief eastern centres with the most productive areas of Canada West.

TEST CANADIAN NORTHERN RAILWAY SERVICE

Principal Agencies: Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



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ESTY FIRE SPRINKLERS

and show you how to reduce insurance costs 50% to 80%.

IT'S A GREAT BIG MONEY SAVER

Write:

H. G. VOGEL CO. (CANADA) LIMITED

169 Duke St. - MONTREAL, P.Q.

In connection with the important shipbuilding plans that are now being carried out in Canada, the Dominion Bridge Company has installed a special department for the manufacture of marine engines, these to be turned over to the various companies that are carrying out the construction of steamers of various sizes.

Point aux Trembles.

The Hamilton Cement Co., Limited, a new company which is headed by Claude Bordier, of Montreal, will erect a plant here.

Quebec.

The Great Eastern Pulp Company has been organized and will erect a pulp and saw mills on the Madeleine River, Gaspe County, P.Q.

The pulp mills of the D'Alma Peribonka Pulp Co. at St. Joseph D'Alma, Lake St. John, have been sold to Messrs. R. W. Barclay, of Montreal, and V. N. Theriault, of Nicolet. The price paid runs about $100,000. The plant of the company will be improved and work will be started immediately.

C. C. Lapierre, of Montreal, has organized an independent cement company that will operate the property owned by the Canada Cement Company, at Neuville, in the County of Portneuf. This property was bought by the cement merger from the Eastern Canada Portland Cement Company, the price being a few hundred thousand dollars. The company had already started the building of a mill. The capital of the new company is $1,250,000, and it is planned to have a daily production of 1,500 barrels per day.

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Automatic Fire Sprinkler System



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Correspondence Solicited





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DROP AND SCREW

SHEET METAL STAMPINGS

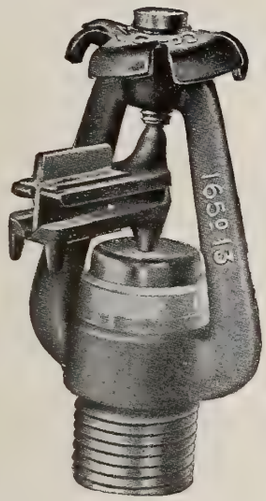
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W. H. BANFIELD & SONS

LIMITED

370-386 PAPE AVE. TORONTO

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MEANS A SYSTEM OF

MANUFACTURERS' AUTOMATIC SPRINKLERS

Are you prepared to fight a fire, should one visit your premises, or are you still unprotected?

Don't delay. Write us for particulars.

The General Fire Equipment Co., Ltd.

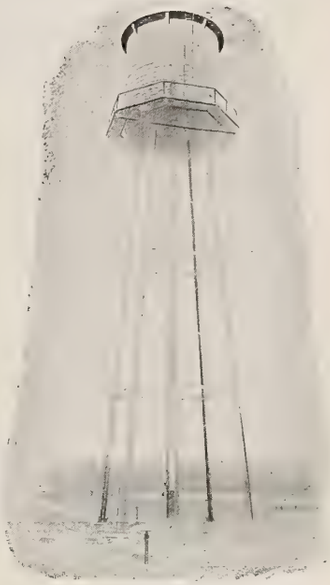
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All sizes and styles.

Made from selected Tank Stock.

Towers and Tanks for sprinkler and water supply, etc.



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SPRINKLER TANKS and TOWERS



also wood and steel tanks for Municipal, Railway and Suburban water supply.

All our tanks and towers are built to pass inspection of any Board of Fire Underwriters.

Send for special tank and tower catalogue.

GALVANIZING HOT AND ELECTRIC

We do all kinds of hot and electro galvanizing for the trade. Our plant is one of the largest in Canada and our charges reasonable.

Write us for quotations on your galvanizing work.

Ontario Wind Engine & Pump Co., Limited

TORONTO MONTREAL WINNIPEG CALGARY



Canadian
CHICAGO BRIDGE & IRON COMPANY
Limited
Bridgeburg, Ontario

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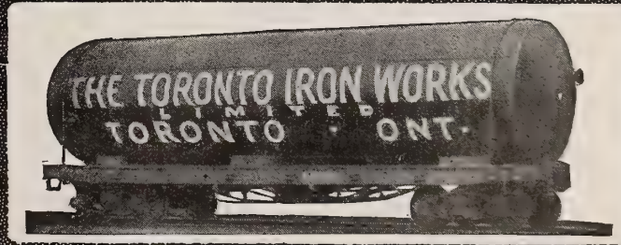
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OIL STORAGE - GASOLINE TANKS - AIR RECEIVERS
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BOILER BREECHING - RIVETED STEEL PIPE BINS & HOPPERS

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For a Quarter of A Century Our

"A" and "AA" DUCKS

have been Favorites

with Manufacturers of Women's and Children's Summer garments. That they have given complete satisfaction is proven by their growing popularity.

"A" Ducks are the light grounds —"AA" Ducks the dark grounds. The range is very complete, providing material for summer wear from the cheapest to the most expensive.

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Montreal—Toronto—Winnipeg

Operating Twelve Mills;
Employing Ten Thousand People.

Manufacturing White and Grey Cottons, Prints, Sheetings, Shirtings, Pillow Cottons, Longcloths, Cambrics, Ducks, Bags, Twills, Drills, Quilts, Bureau Covers, Towels and Towelling, Blankets, Rugs, Twines and many other lines used by Manufacturers in Rubber and other Trades.

Richmond.

The Huot Rifle Automatic Attachment Company plan factory in the fall.

St. Hyacinthe.

Duclos & Payan have let contract for an extension to their factory.

Terrebonne.

Contract has been awarded for the erection of an $18,000 shoe factory.

Three Rivers.

J. N. Gidin & Cie will erect a $4,000 brick and frame factory extension. The manager, J. N. Gidin, is in the market for forty barrels of cement, a quantity of stone, beams, sheathing, flooring and 540 square yards of tile roofing.

The Three Rivers Casting Company, corner Hertel and Charlevoir Streets, plan $35,000 brick foundry and want prices on foundry machinery, furnaces, lathes, etc.

SASKATCHEWAN.

Saskatoon.

New tenders will be called shortly for a $12,000 metal-clad and fireproof construction warehouse for Sawyer-Massey Co., Limited, head office, Hamilton, Ontario.

REPLACEMENT OF WAR LOSSES.

Protection of Child Life Must Receive Greater Attention.

The importance of infant welfare work at this stage in the nation's crisis is daily becoming more generally recognized by all classes of the community. For many years our public health authorities have been sowing on what seemed very barren ground, but the outpouring of the nation's blood, the willing sacrifice of thousands of the best and most virile of the race, has caused the apparently lost seed to germinate, and there are now prospects of an abundant harvest. Had we looked after our infant life during the last forty years there ought to have been to-day between the ages of 18 and 40 another 1,300,000 men available for the fighting forces. In other words, we have allowed, through our blindness, thousands of men to die in their infancy, male babies born often healthy and in all respects capable in due time, if proper attention had been given them, or if their home conditions had been better, of growing up and doing their full duty to the nation as our splendid sons to-day are doing in the battlefields of the world. Because of ignorance which is curable, because of improper conditions around them which are removable, thousands of these fellow citizens of ours whom we shall "too late" wished we had saved, now die within twelve months of their arrival in the world.—*W. H. Edmunds. in Journal of the Royal Sanitary Institute.*

SAVING THE WASTE PAPER.

Enormous Quantities are Lost which Might be Again Utilized.

All available sources of information report shortage in raw material for woodpulp. Recruiting for the forestry and other battalions has taken many woodsmen out of the country, and during the past season the cut of wood has been very much below the average.

The demand for Canadian woodpulp is rapidly increasing. One of the more important factors is the cutting off from the United States of the supply from Norway and Sweden, owing

DOON TWINES Limited

HEAD OFFICE, KITCHENER, ONT.

Manufacturing a full line of Twines from flax, hemp, and jute fibres.

We call special attention to our heavy Warehouse and Spring Twines. We also manufacture, from the above materials, a variety of ropes of all sizes. Considering yardage and durability these are the cheapest ropes to be had to-day.

Write for prices and samples.

Mills: DOON *and* KITCHENER

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MANUFACTURERS OF

WHITE VICTORIA LAWNS

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OF EVERY DESCRIPTION

Penmans

Underwear, Hosiery and Sweaters
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Lumbermen's Socks, etc.

Factories at

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PARIS : : : CANADA

to lack of shipping. The heavy sale of newspapers, with news of the war, has also greatly increased the demand for paper.

The Canadian and United States governments have enabled the newspapers to secure their supply of paper at a price which they can afford to pay. Without this action, many of them would no doubt have been compelled to cease publication.

Canadians are wasting an enormous amount of paper daily. Very small, indeed, is the supply available for reclamation compared with the amount distributed daily by the newspapers alone. All of this paper, if saved, could be used again for other purposes, such as the making of building papers, boxboard, roofing felts, filling for pasteboards, etc., thus relieving the shortage of new materials.

With the scarcity and increased cost of pulpwood, the public should make every effort to assist. Much can be accomplished by saving waste paper, and various organizations have had good results. In one day, eight schools in Winnipeg turned in 5½ tons of old paper to the Red Cross Society. This achievement can be repeated all over Canada. In many of the smaller places, schools could combine their collections. Boy Scout or Girl Guide troops could collect and deliver to a headquarters, or collecting boxes could be placed at street corners where the public could deposit parcels of old papers. Through the use of collecting boxes in Ottawa, the Daughters of the Empire are securing 35 tons per month. All qualities of paper can be used: newspapers, books, magazines, manilla or kraft wrapping, cartons, etc.

Numerous organizations could with advantage undertake this work, looking after the gathering, packing and shipping of the material. A large revenue could be derived from this source, and valuable service thus rendered to Canada in relieving our forest resources of a heavy strain.

JULIUS COHEN & JOSEPHY

Foreign Domestic WOOL *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO
Manufacturers of Pulled Shoddies

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement see Index, Page 123



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"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

Distilled and Bottled by

HIRAM WALKER & SONS
LIMITED

Walkerville, Canada

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*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*The Structural Steel Co., Limited, Montreal, Que.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford. Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton. Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton. Ont.
*Booth-Coulter Copper & Brass Co., Limited. Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton. Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Joliette Steel Co., Ltd., Montreal.
*Wm. Kennedy & Sons, Ltd., Owen Sound. Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation. Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford. Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford. Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford. Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited. Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich,Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal. Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton. Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke. Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited. Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited. Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

*For Display Advertisement see Index, Page 123

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.
CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.
CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,
COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
CORKS
S. H. Ewing & Sons, Montreal, Que.
CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.
CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.
CORSETS
Dominion Corset Co., Quebec, Que.
COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.
COTTONADES
Hamilton Cotton Co., Hamilton, Ont.
COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.
COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
CRANES
*Northern Crane Works, Walkerville, Ont.
CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.
CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.
CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.
CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.
CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.
CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
CUPS, presentation
Standard Silver Co., Toronto.
CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.
CURLED HAIR
*Delany and Pettit, Ltd., Toronto.
CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.
CUTLERY
Standard Silver Co., Toronto.
CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.
DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
DESIGNERS
Ontario Engraving Co., Hamilton, Ont.
DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.
DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.
DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
DISINFECTING APPARATUS
Spramotor Co., London, Ont.
DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.
DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.
DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.
DRESSING, belt.
Sadler & Haworth, Montreal, Que.
DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.
DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.
DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.
DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.
DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.
DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.
DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.
DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.
DYNAMITE
Canadian Explosives, Limited, Montreal, Que.
DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.
ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.
ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.
ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.
ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.
ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.
ELECTROTYPING
Central Press Agency, Toronto.
ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.
ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.
ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.
ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.
EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.
ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.
ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
*Massey-Harris Co., Ltd., Toronto.
ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.
ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.
ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton Ont.
Rolph & Clark, Limited, Toronto
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.
ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.
ENGRAVING
*J L. Jones Engraving Company, Toronto.
ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited, Ottawa, Ont.
ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.
EXCELSIOR
*Delany & Pettit, Ltd., Toronto.
EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.
EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.
FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.
FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
FANS
*Sheldons, Limited, Galt, Ont.
FASTENERS, belt
*Sadler & Haworth, Montreal, Que.
FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited Montreal.
FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.
FENCING AND GATES, woven wire
Banwell-Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.
FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.
FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.
FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.
FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.
FILING CABINETS
*Office Specialty Co., Newmarket, Ont.
FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.
FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.
FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.
FIRE BRICK, JOINTLESS
*Beveridge Paper Co., Ltd., Montreal.
FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.
FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

*For Display Advertisement see Index, Page 123

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
*Hamilton Gear & Machine, Toronto.
*Winnipeg Gear & Engineering Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.

INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

*For Display Advertisement see Index, Page 123

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.

LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS
*Maples, Limited, Toronto.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*The Pedlar People Limited, Oshawa.

METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*The Pedlar People Limited, Oshawa.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement see Index, Page 123

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.

PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES AND CATSUPS
T. A, Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement see Index, Page 123

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*The Pedlar People Limited, Oshawa.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHEETS, galvanized
*Dominion Sheet Metal Co., Ltd., Hamilton.
*The Pedlar People Limited, Oshawa.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*Metallic Roofing Co., Limited, Toronto.
*The Pedlar People Limited, Oshawa.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMELTER LINING
*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

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SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.
SPRAYERS
Spramotor Co., London, Ont.
SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.
SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.
STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.
STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.
STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.
STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STAMP MILLS
*Jenckes Machine Co., Sherbrooke.
STATIONERY, office
Harris Lithographing Co., Toronto.
STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.
STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.
STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.
STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.
STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.
*Joliette Steel Co., Ltd., Montreal.
STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.
STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.
STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL SHELVING
*Dennis Wire & Iron Works Co., London.
STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.
STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STEREOTYPING
Central Press Agency, Toronto
STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.
STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.
STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.
STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.
STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.
STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.
STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.
SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.
SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.
TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.
TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.
TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.
TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,
TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited. Montreal, Que.
TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.
TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.
TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.
TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.
TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.
TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.
TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.
TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.
TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.
TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.
TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.
TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.
TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.
TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.
TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.
TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.
TUBING, Fibre
*Beveridge Paper Co., Limited. Montreal.
TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.
TUMBLERS, foundry
*Northern Crane Works, Limited. Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
TURPENTINE
*Brown Corporation, La Tuque, Que.
TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TWEEDS
Rosamond Woollen Co., Almonte, Ont.
TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.
TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.
TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont
UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.
UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.
UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.
VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.
VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal, Que.
VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt
VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.
VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.
VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*The Pedlar People Limited, Oshawa.
VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.
WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.
WASHERS
*The Steel Company of Canada, Limited. Hamilton.
WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.
WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London. Ont.
WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.
WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto.
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

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WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.
WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que
Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.
WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.
WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.
WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont
WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WINDOW SHADES
Daly & Morin, Montreal, Que.
WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.
WIRE CLOTH
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal. Que.
WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.
WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.
WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.
WOOD PRINTERS
Barchard & Co., Ltd., Toronto.
WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.
WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
WOOL
*H. V. Andrews, Toronto.
WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.
WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.
WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.
WROUGHT IRON PIPE
*The Steel Compony of Canada. Ltd., Hamilton.
WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.
YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.
ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement see Index, Page 123

ARE YOUR STEAM PIPES INSULATED?

IF NOT YOU ARE BURNING MONEY

A GOOD COVERING pays for itself in one Season, and is a revenue producer indefinitely. The Best is the Cheapest **WE HAVE IT**

EUREKA MINERAL WOOL & ASBESTOS COMPANY

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THE BOOTH-COULTER COPPER & BRASS COMPANY, LTD.

SHEETS TUBES **COPPER & BRASS** AND RODS

SPECIAL SIZES CUT TO ORDER FROM LARGE STOCK—PROMPT SHIPMENT

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SOLICITORS FOR THE CANADIAN MANUFACTURERS' ASSOCIATION

Offices—Toronto General Trusts Building
59 Yonge Street

TORONTO
Canada

VOL. XVIII., NO. 3 JULY, 1917 $2.00 PER YEAR

Industrial Canada

WINNIPEG CONVENTION NUMBER 1917



"I'd rather lather father—" than father lather me.

Vinolia

—Shaving Cream—one of the World-Renowned Family of Vinolia Toilet Preparations. Lever Brothers Limited (Proprietors of Vinolia) have favored us with the preparation and placing of their advertising for more than a decade.

Upon enquiry—we believe they will tell you they are well satisfied with the quality and reliability of our service.

J. J. GIBBONS LIMITED

General Advertising Agents

MONTREAL TORONTO WINNIPEG

Cables—Gibjay, Toronto Codes—ABC, 5th Edition

Published by the CANADIAN MANUFACTURERS ASSOCIATION

HEAD OFFICE, TORONTO, ONT.

ABRASIVES *Made in Canada*

Users of abrasives of all kinds are invited to investigate our facilities and service. We have installed in Hamilton a plant for the production of

A High-Grade Artificial Corundum

CORALOX

All inquiries will receive our immediate attention

D. A. BREBNER LIMITED

Factory: HAMILTON — Head Office: 58 King St. West, TORONTO

AUTOMOBILE PARTS
DROP FORGINGS

D.F.&S.Co. Quality & Service

SHEET METAL WORK
GENERAL STAMPINGS

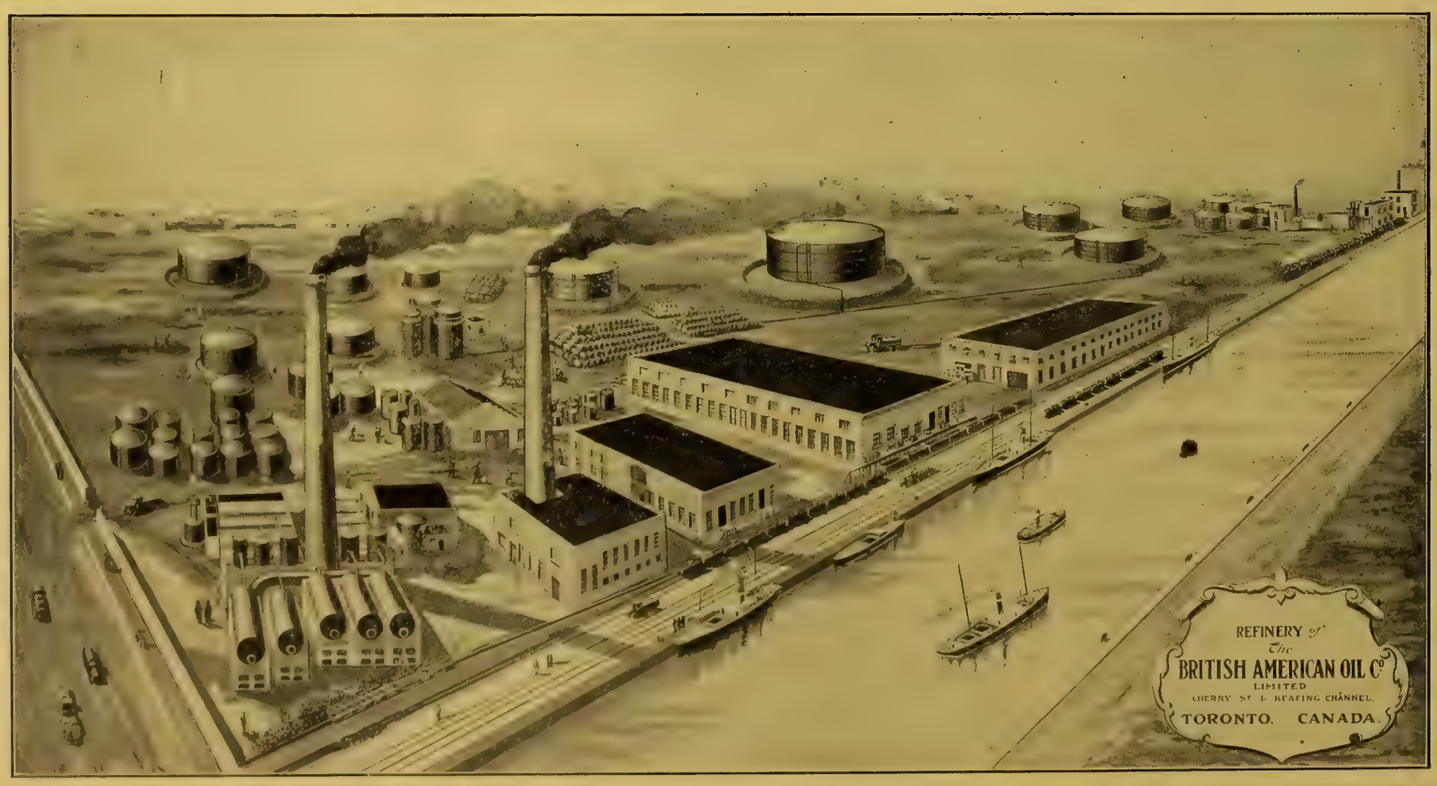
We have erected and are now operating

THE LARGEST COMMERCIAL DROP FORGE PLANT IN CANADA

We are equipped to handle large forging contracts.
This expansion also increases our stamping facilities.
We stand by our Motto: Quality and Service.

DOMINION FORGE & STAMPING CO., LIMITED
Walkerville - Ontario

THE BRITISH AMERICAN OIL CO., LIMITED

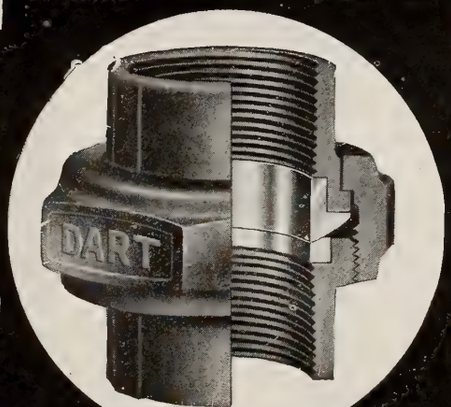


Head Office: ROYAL BANK BUILDING, TORONTO — Branches: Montreal, Ottawa, London, Windsor, Etc.

Dart Union Pipe Couplings

NEVER LEAK

BRONZE TO BRONZE AT THE JOINT means no rust or corrosion — no deterioration



HEAVY IRON PARTS will not stretch or pull apart

True Economy
PERMANENTLY TIGHT CONNECTION WHETHER PIPES ARE IN OR OUT OF ALIGNMENT. THEY REQUIRE NO ATTENTION. NEVER HAVE TO BE REPLACED

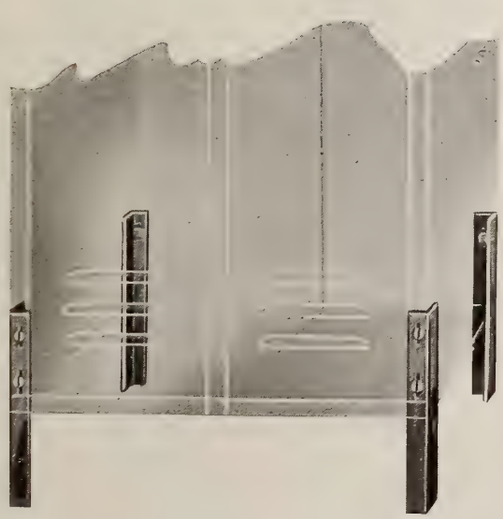
SOLD BY ALL SUPPLY HOUSES

DART

Manufactured by
DART UNION CO., Limited
Toronto - Canada

DART

Article Number Four



It has been our aim in designing the

Meadows Factory Locker

to provide for every condition of service. For instance—

The Baked Enamel Finish prevents rusting.

The size — 13½" square x 72" high—makes a roomy locker and yet economizes space.

And BESIDES—the legs are adjustable to take up unevenness in the floor and to ensure each unit having an even bearing. There is no tipping and sagging with MEADOWS LOCKERS.

The above are additional reasons why MEADOWS LOCKERS will serve you best.

The GEO. B. MEADOWS, Toronto Wire, Iron & Brass Works Co., Ltd.
479 West Wellington St., Toronto, Canada

JARDINE TAPS



TAPPER TAPS



BOILER TAPS



MACHINE SCREW TAPS



PIPE TAPS



MACHINISTS' HAND TAPS



MACHINE OR NUT TAPS



PULLEY TAPS

Of a Quality That Means Service and Economy

Best warranted English Tool Steel used exclusively—**No cheese paring of a cent or two a pound on price of steel.**

No cold drawn steel used to save cost of turning. At least one-sixteenth of an inch turned off every tap blank; tap threads are thus **cut on unbruised steel, securing hard and tough points.**

Guided by forty-seven years' experience, we take unwearied pains in overseeing all operations.

You can't get better, but may easily buy taps not as good.

If you have not used our taps give them a trial. It will pay you. Incidentally it will pay us. **We need your business, and will hustle to attend to your wants.**

Catalog and list price? Write

A. B. JARDINE & CO.

HESPELER, ONT.

Established 1870

Owning is Cheaper Than Renting

For inter-department communication the practice of renting a service from an outside system is a costly mistake.

We can install a Presto-phone system that will connect up every department of your plant and room in your office, each with the others, at an installation cost of less than two years' rental of a system with outside connections.



The Prestophone—the Canadian Automatic that requires no Switchboard operator

THE PRESTO-PHONE

an all-Canadian system meets the need of growing Canadian industries. It meets that need at a small cost for installation and practically no cost for upkeep.

You are interested in this—it is a money-saving proposition and an effective aid in time-economy. Let us show you. Simply ask us for particulars, and we will gladly demonstrate exactly how the Presto-phone can make things run smoother in your business.

Canadian Independent Telephone Co., Limited
263 Adelaide Street West, Toronto



Excelsior Life Bldg.
Toronto
Dunham System of Heating

Dunham Systems of Heating

Are adapted to all classes of buildings. They produce economy for the man who pays the fuel bill and heating comfort for the tenant or workman.

In the building shown here, a DUNHAM RADIATOR TRAP on the return end of each radiator provides free, noiseless circulation of heat in all parts and—with steam pressure of less than one pound.

You can appreciate that this means economy, comfort and efficiency in heating. Manufacturers desiring to locate offices in Toronto, will find most excellent heating service in this building.

With present coal prices, economy in heating is vital. DUNHAM SYSTEMS will produce greater economy and heating efficiency in YOUR plant.

Get in touch with our nearest Branch Office—they can render a valuable service in advising on your heating problems.

C. A. DUNHAM CO., LIMITED . . TORONTO

OTTAWA—214 Booth Building HALIFAX—McCurdy Building
MONTREAL—Room 20, 11 St. Sacrament Street VANCOUVER—520 Duncan Building WINNIPEG—405 Tribune Building

LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

THE JOHN BERTRAM & SONS CO. LIMITED

DUNDAS, ONTARIO, CANADA

MONTREAL
723 Drummond Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

WINNIPEG
1205 McArthur Bldg.

ADJUSTABLE TAPS

FOR

Shrapnel and H.E. Shells



ON hard, tough shell steel, solid taps are too expensive as the excessive wear quickly puts them below gauge size.

The simple adjustment on the tap, shown in our cut, was gotten out to overcome the effect of this excessive wear and to provide an economical substitute for the expensive chaser tap.

The accuracy to size and form is easily maintained and the life of the tool prolonged far beyond that of a solid tap at a comparatively small advance in price.

We can supply them for all tapping operations on Shrapnel and H.E. Shells to 4.5" diameter.

Ask for our list and prices of Shell Tools
Reamers, Taps, Dies, Cutters

If you have not received our No. 8 catalogue yet, we have one for you

PRATT & WHITNEY CO.
of Canada, Limited
Dundas : Ontario

MONTREAL	WINNIPEG	VANCOUVER
723 Drummond Bldg.	1205 McArthur Bldg.	609 Bank of Ottawa Bldg.



Good Cut Gears



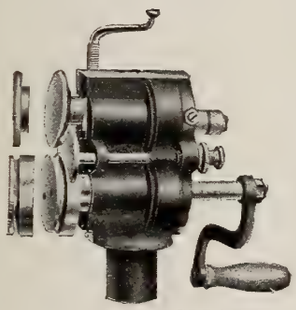
Wire or Phone for Quotations

The Hamilton Gear & Machine Co.

Van Horne Street, TORONTO

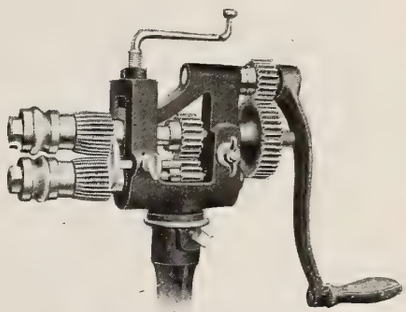
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Sheet Metal Working Machinery of Any Description



ENCASED SMALL TURNER

Our Machinery embodies all the latest improvements devised for the reduction of costs.



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THE BROWN-BOGGS CO., Limited

Hamilton - Ontario

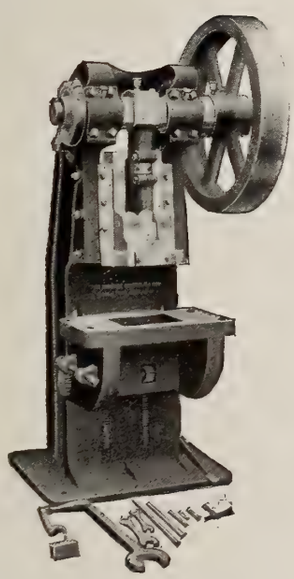
MANUFACTURERS OF

Tinsmiths'

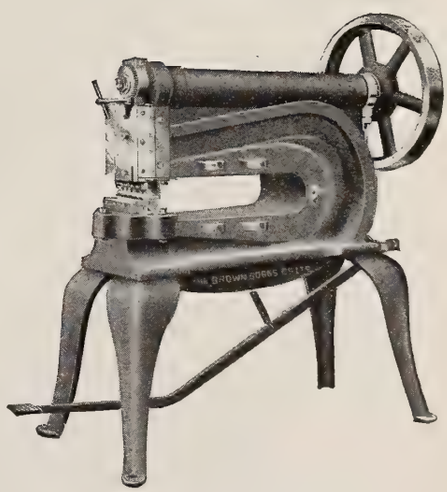
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Canning and Evaporating Machinery



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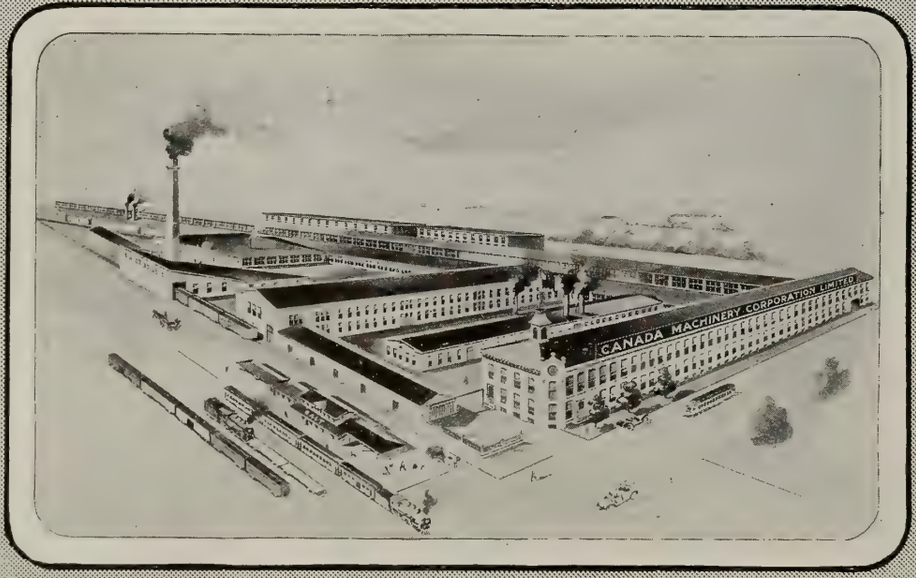
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MACHINE TOOLS

LATHES
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HAMMERS
PLANERS
SLOTTERS
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SHEARS
PRESSES



WOODWORKING MACHINERY

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RIP-SAWS
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TORONTO

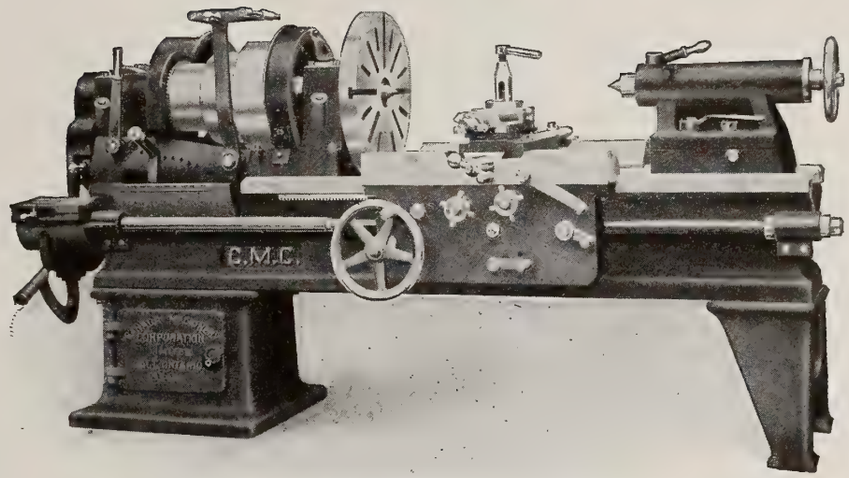
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WORKS AT
GALT AND
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CANADIAN MADE MACHINERY
OF THE HIGHEST STANDARD OF
WORKMANSHIP AND DESIGN.

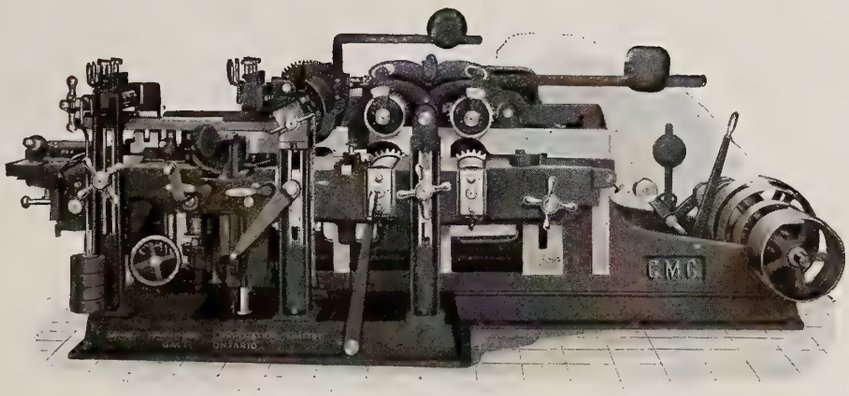
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Quick Change Double Back-Geared Engine Lathe

DESCRIPTIVE CIRCULARS
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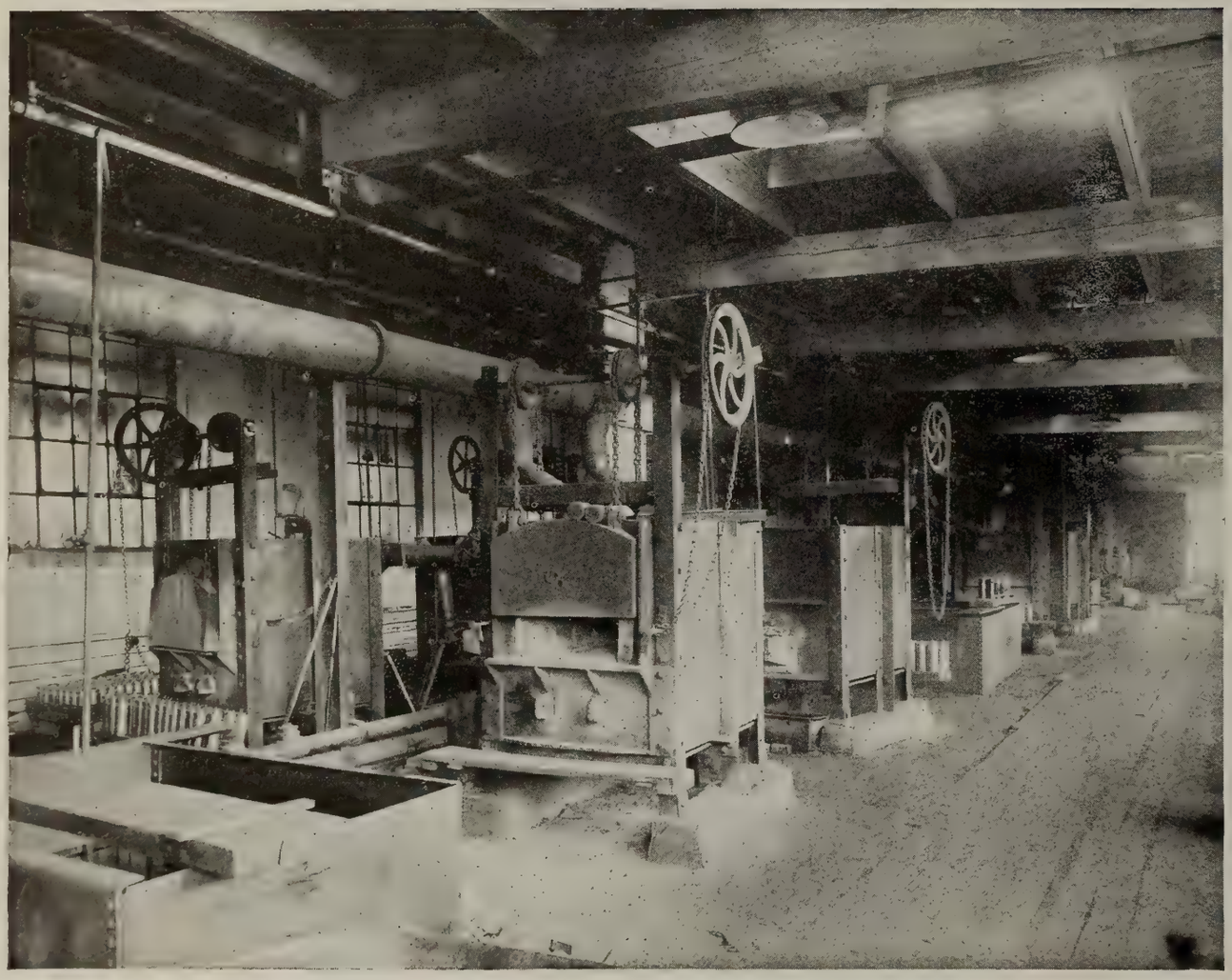


12-inch Open Side Heavy Moulder

We are the Largest Manufacturers of Iron and Wood-Working Machinery in Canada

CANADA MACHINERY CORPORATION
LIMITED
GALT, ONT.

"MECOL"



GROUP OF ANNEALING AND TEMPERING FURNACES
installed at the

Canadian Vickers Limited, Shell Dept.

Largest manufacturers in CANADA are using
"MECOL" FURNACES

Our products are designed and built in CANADA.

Mechanical Engineering Company, Ltd.

THREE RIVERS, QUE., CANADA

"MECOL"



BATTERY OF CONTINUOUS BILLET HEATING FURNACES

installed at the

Canadian Steel Foundries Limited

POINTE ST. CHARLES WORKS

Tell us your requirements.
We will submit plans and specifications to cover.

We manufacture furnaces for all purposes
to be used with any kind of fuel.

Mechanical Engineering Company, Ltd.

THREE RIVERS, QUE., CANADA

YOU NEED "LITTLE DAVID"
FOR WOODEN SHIPBUILDING
— MORE WORK AND LESS WORRY —



THE "LITTLE DAVID" WOOD BORER

This tool is ***the lightest, most powerful*** and ***the most economical in use of air*** and, therefore

"THE WOODEN SHIPBUILDER'S WOOD BORER"

Bulletin 8407 will tell you the reasons why. May we not send you a copy?

Our "LITTLE DAVID" Riveting Hammer No. 90 is widely used for "horsing" in oakum, etc. The saving in time makes this method the one best way where compressed air can be had.

We also have a Drift Bolt Driver, CC-101, which can be arranged for up or down driving in any position or at any angle. It is powerful and easy to handle.

Our line of "LITTLE DAVID" pneumatic tools for Steel Shipbuilding comprises Riveters, Chippers, Drills, Reamers, Grinders, etc.

It will pay you to get our bulletins and prices, and our nearest branch will be glad to serve you in any way.

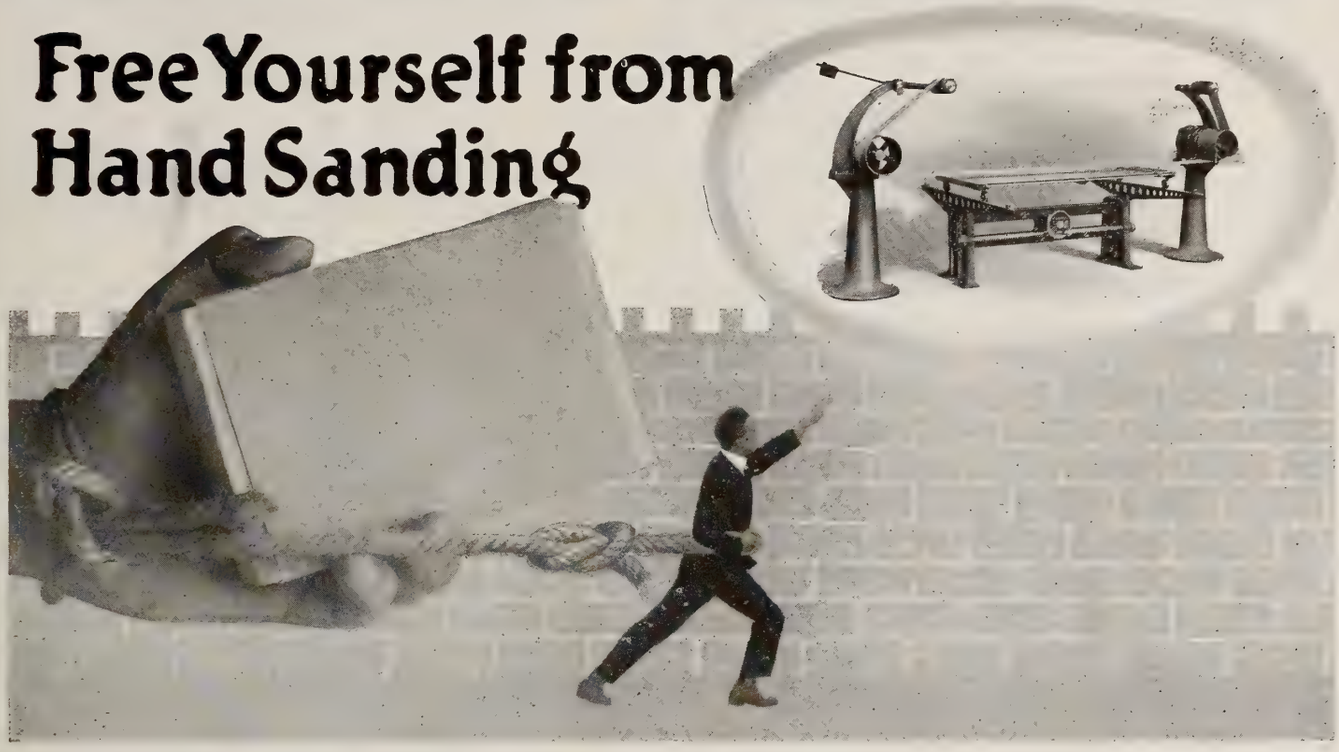
CANADIAN INGERSOLL-RAND CO., Limited

COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Works : SHERBROOKE, QUE.

Sydney Toronto Cobalt Timmins Winnipeg Nelson Vancouver

Free Yourself from Hand Sanding



The Reason Why

Hand sanding is expensive. It's getting more expensive every day. The increased cost of raw materials and labor has driven the manufacturer into a position which offers but one chance to save the present margin of profit. It is the conversion of loss into savings.

One of the biggest sources of loss in many factories is needless use of hand labor. More than ever before it is necessary to invest in labor-saving machinery as a means of saving the margin of profit.

The Yates No. 427 Belt Sander is one of the best that can be employed for that purpose. With it one man can do the finishing work of six or eight working by hand. It is long wearing and economical. At the present cost of hand labor it saves its own value in a short time.

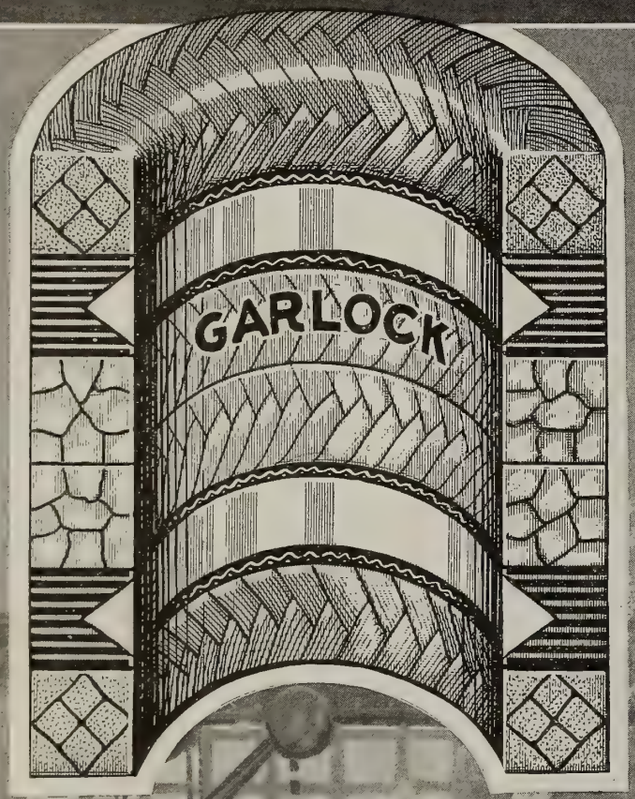
Let us send you a free descriptive circular, or, better yet, send in a sample of your work, and we will tell you whether the Yates Flexible Belt Sander would be a profitable machine for you to look into, or not. No obligation on your part is involved.

P. B. Yates Machine Co. Ltd.

HAMILTON, ONT. CANADA

U.S.A. Plant: Beloit, Wisconsin, U.S.A.

GARLOCK PACKINGS



For General Hydraulic Service

and in steel mills and blast furnaces, where pressures vary by thousands of pounds, and where rams and plungers are often exposed to grit and corrosion

Garlock Style No. 960

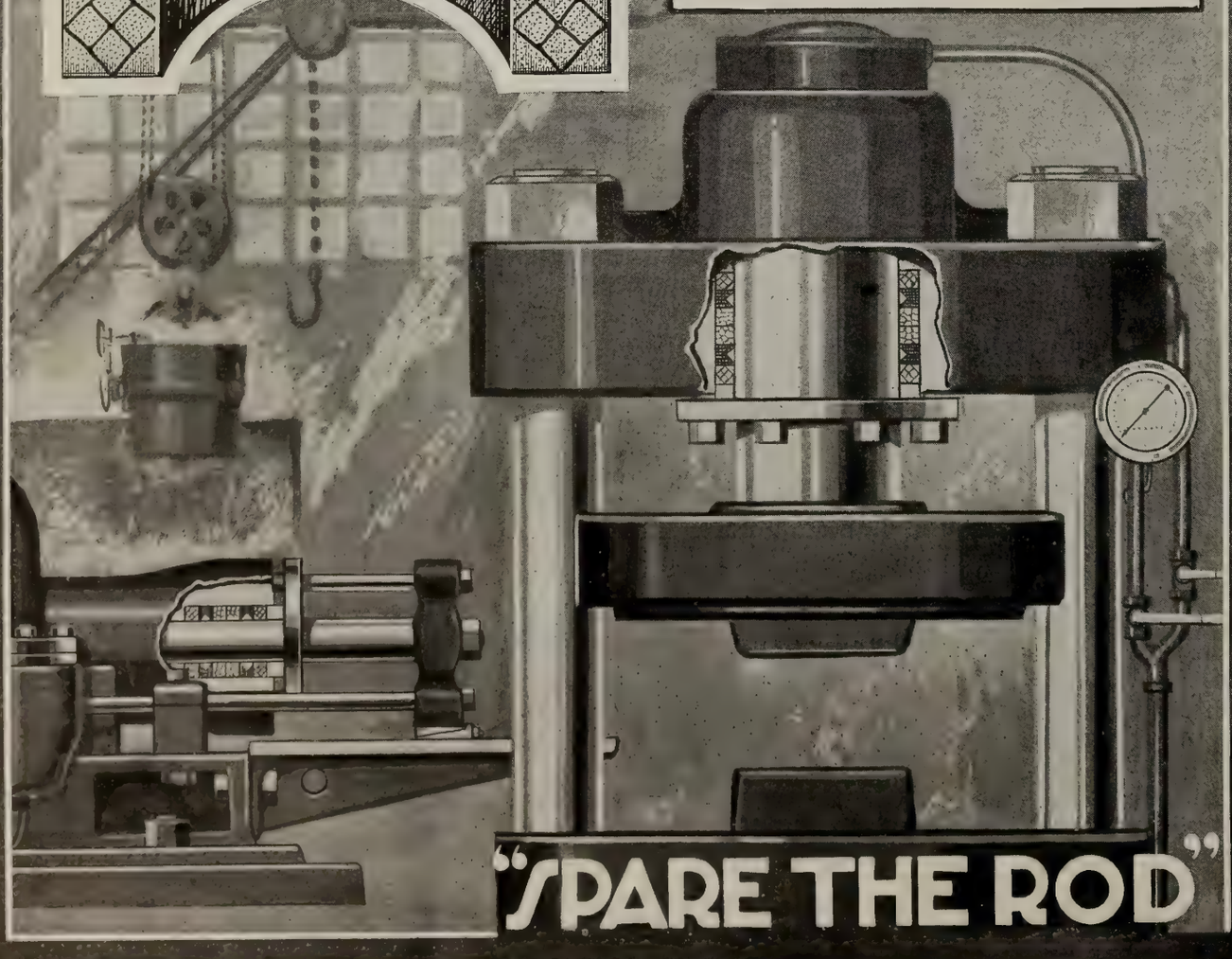
is guaranteed to give entire satisfaction. This combination is made up of braided copper, metal wedge and waterproof hydraulic rings. This will hold a pressure of 3,000 pounds.

Write for our catalog

The Garlock Packing Company

HAMILTON, ONT.

Branches in Principal Cities



"SPARE THE ROD"

To Canadian Shipbuilders

Ask us for Circular of this machine built specially for your needs.

It is absolutely the most up-to-date machine of its kind made to-day, and will appeal to the small shop as well as to the large. The price is right, and it will mean for you a tremendous saving in labor as well as a great increase in production.

For good delivery write us at once as we have sold considerable already.



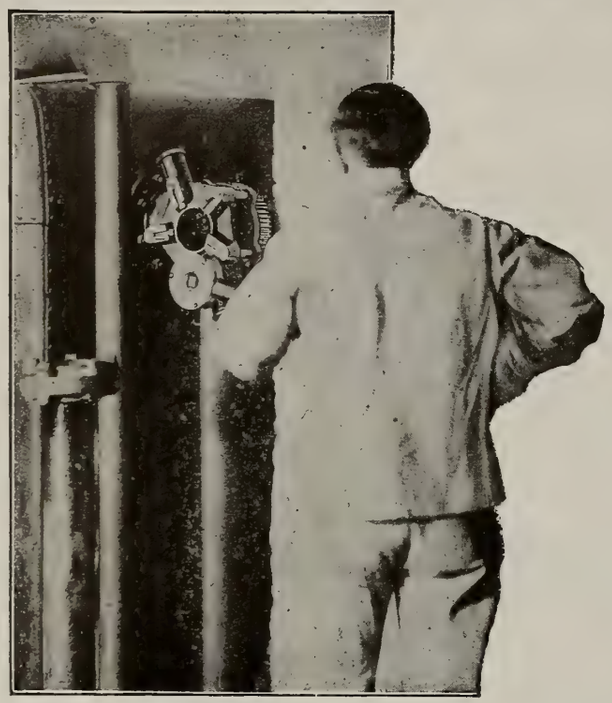
No. 134 "Preston" Adjustable Bevel Ship Band Saw

With Power Feed from 57′ to 90′ per minute.
Wheels 42″ Diameter. Angles 45° to Left and 10° to Right.

Ask for Hand-Feed Circular No. 133

The Preston Woodworking Machinery Co., Limited, Preston, Ont., Canada

Sales Agents : The A. R. Williams Machinery Co., St. John, Vancouver and Toronto



With but a 10 in. clear space, the engineer, with a No. 2 Toledo, threaded this 4 in. pipe, and thereby saved valuable time, and inconvenience.

Save Money on Your Repair Bills

You invest a large amount in machinery and appliances for getting out your product.

Spend also a small amount for tools to help your repair man to keep these machines running.

Our Ratchet Pipe Threading Dies will thread a pipe in a trench or any odd corner.

We make Ratchet Hand Drilling Machines specially for repair work.

Tube Expanders, Taps and Dies for all purposes.

ASK FOR OUR CATALOGUE

A. B. JARDINE & CO., Hespeler, Ont.

HOSKINS ELECTRIC FURNACES

Shrinkage of Dies and Tools has been practically eliminated

High-speed production, heavy duty machines, the high cost of high-speed steel, and the big loss from shutdowns demand the highest efficiency in tool hardening. The reason that over 700 plants use HOSKINS ELECTRIC FURNACES to harden their dies, milling cutters, gear hogs and other tools is because **the exact temperature control is easy, heat treating is absolutely uniform, and even the chamber atmosphere can be regulated to suit the steel under heat.** Shrinkage, scaling and pitting are negligible, every tool has maximum working qualities.

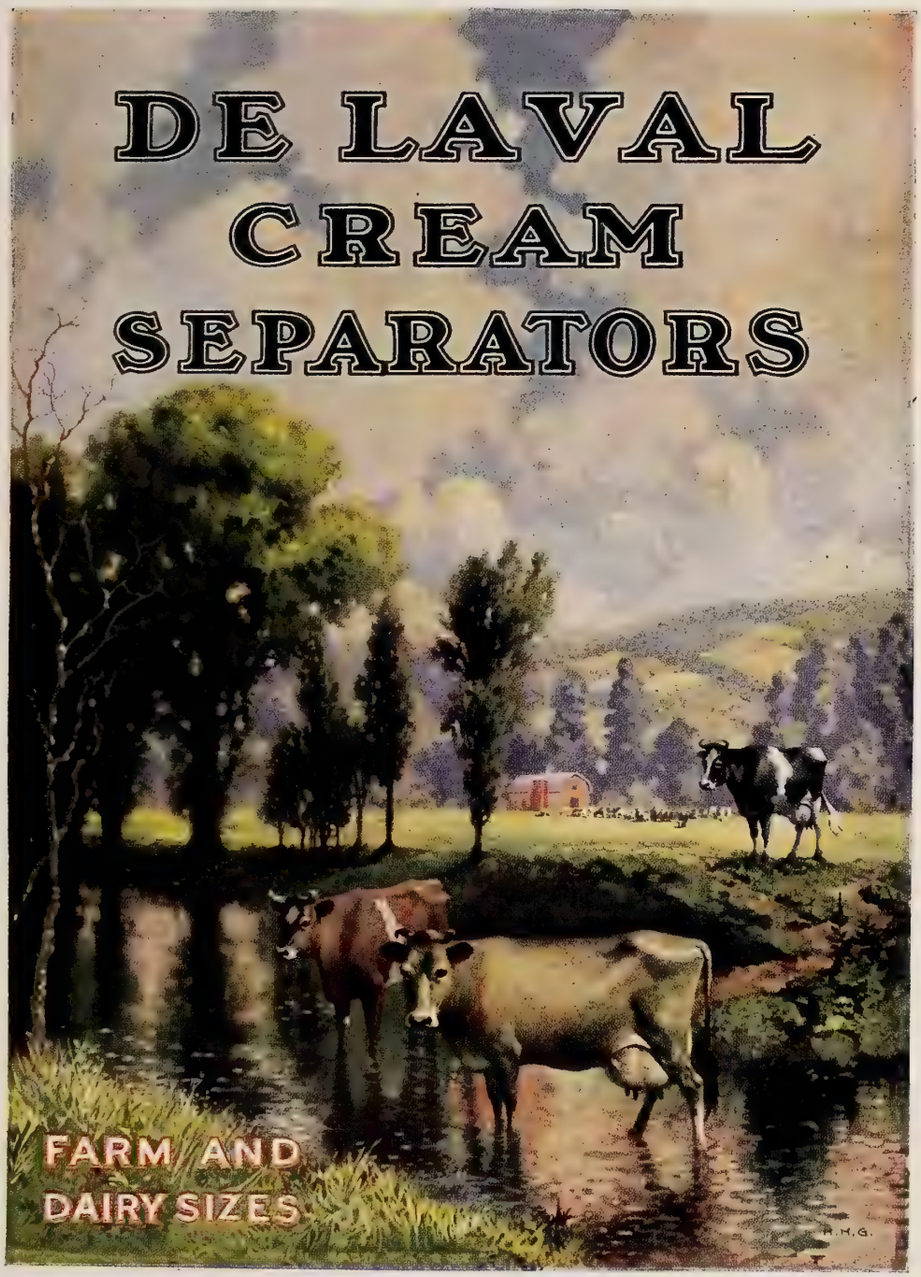
We would like to **show** you what HOSKINS ELECTRIC FURNACES can do. **Write for particulars and Bulletin No. 10.**

Canadian Hoskins Limited

Electric, Gas and Oil Furnaces and Pyrometers

WALKERVILLE, ONT.

SELLING POWER!



Reproducing work we have done, and which we can always *repeat* in quality and effectiveness,

Experts may prepare your advertising matter, but the *quality of printing* you use *determines its selling power.*

Complete *modern* equipment and long, *practical* experience with big advertising propositions make our assistance always helpful, whether you want us to originate and prepare a complete campaign or to print a single piece of advertising matter. Write or call.

Toronto **SOUTHAM PRESS LIMITED** Montreal

CANADA'S LEADING PRINTING HOUSE

Luxacoted Porcelain Book and Red Seal Coated Book

MADE IN CANADA AND SOLD ONLY BY

RITCHIE & RAMSAY, LIMITED - - Toronto, Canada



ASK YOUR DEALER

FOR

Jenkins Bros.' Type "K" Iron Body Gate Valves

AND

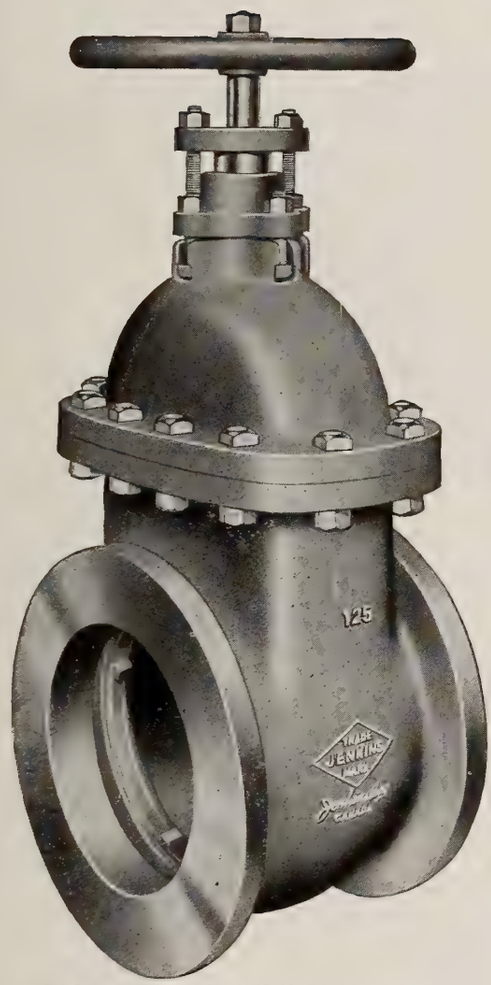


FIG. 402, TYPE "K," IRON BODY INSIDE SCREW, GATE VALVE, FLANGED

look for the Diamond Trade-Mark which is cast on the body of all genuine valves.

This Trade-Mark represents the highest grade of valves made; the production of one of the most modern valve plants in the world.

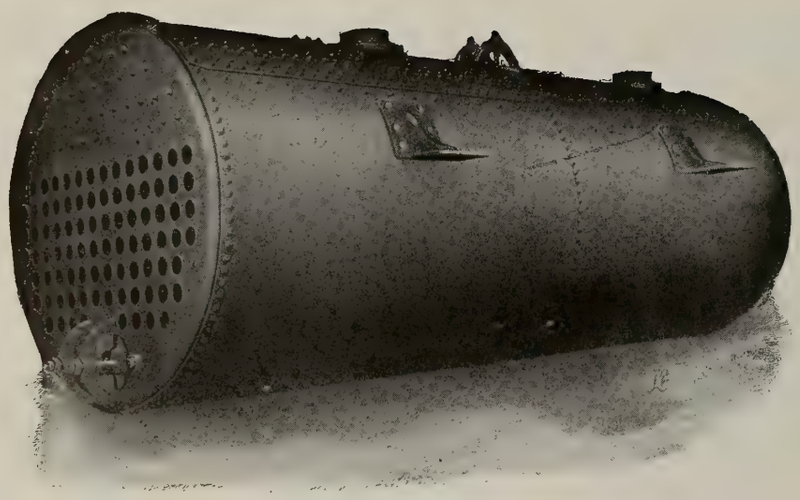
It's worth while for you to investigate the merits of Type "K" Gate Valves. Catalogue No. 8 tells you all about them and copy will be sent you free on request.

Type "K" Iron Body Gate Valves are registered for use in Ontario and the Western Provinces by the Depts. of Public Works.

JENKINS BROS., LIMITED

103 ST. REMI ST. **MONTREAL**

BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

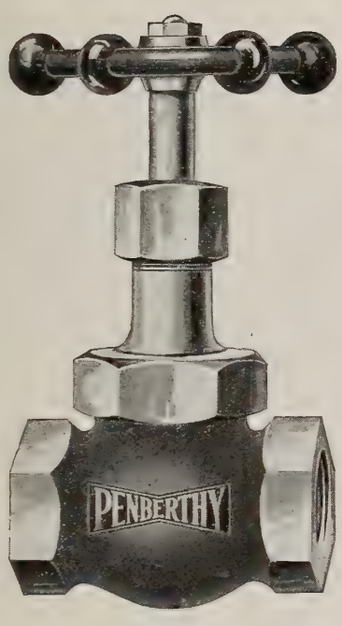
ENGINEERS AND BOILERMAKERS

14 Strachan Avenue Toronto, Canada

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers

TRADE PENBERTHY MARK

COMPODISK BRASS GATE VALVES



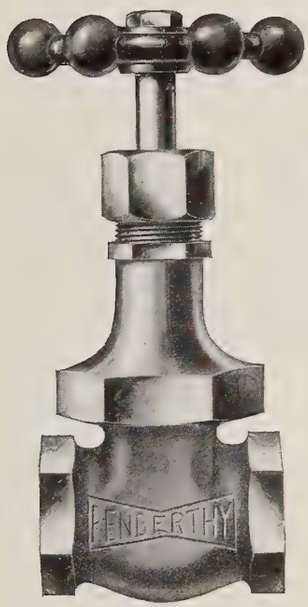
IN

Globes, Angles, Checks and Gates

A distinctive feature in all Penberthy Valves is the

"Outside Bonnet Construction"

It's strong where others are weak.



"With the Compodisk you take no risk"

Approved and Registered for 175 lbs. steam.

A better valve at no greater cost.



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"The gate that's up-to-date"

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Best quality Steam Metal

Can be used for Water, Steam or Air.

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Did you ever consider the delicate mechanism of the Penberthy Automatic Injector? Do you realize that it takes modern and up-to-date machinery and the most skilled and accurate mechanics to make this machine?

ISN'T IT REASONABLE

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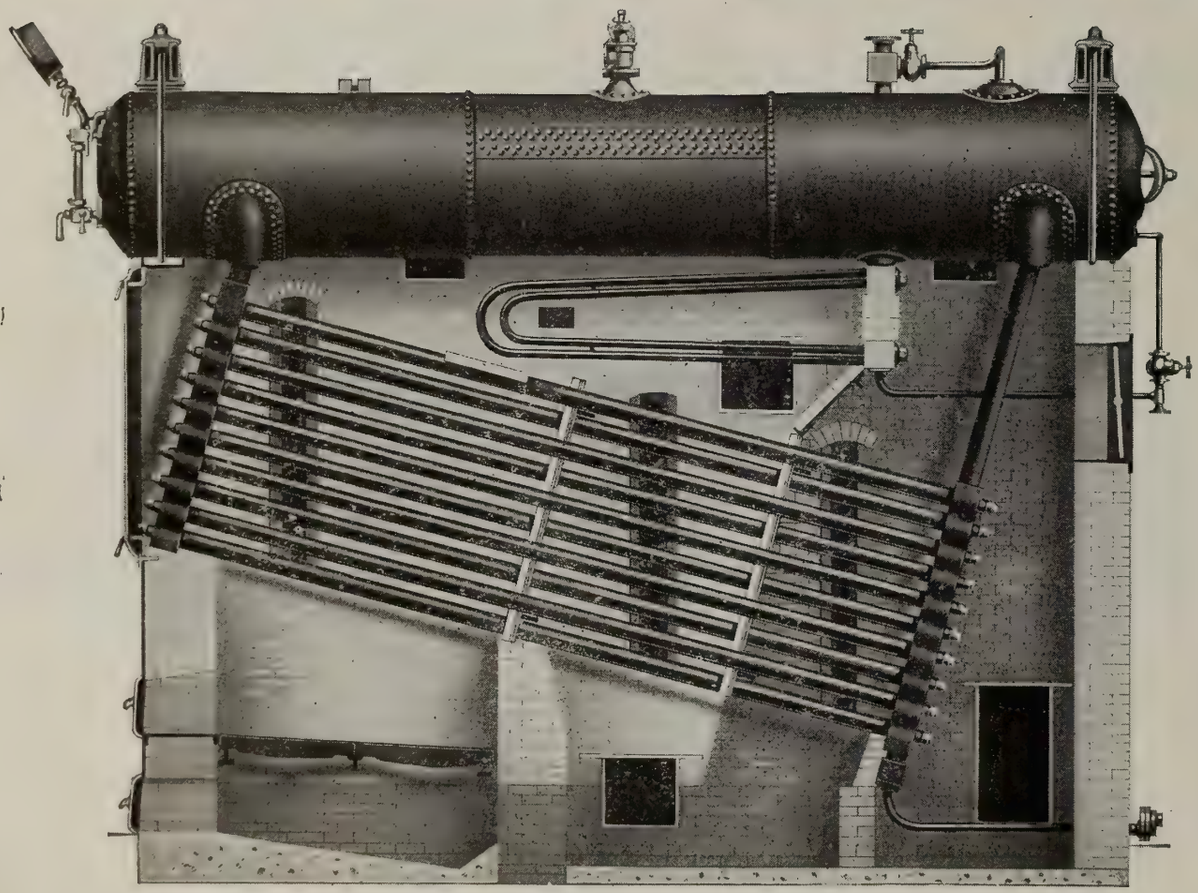
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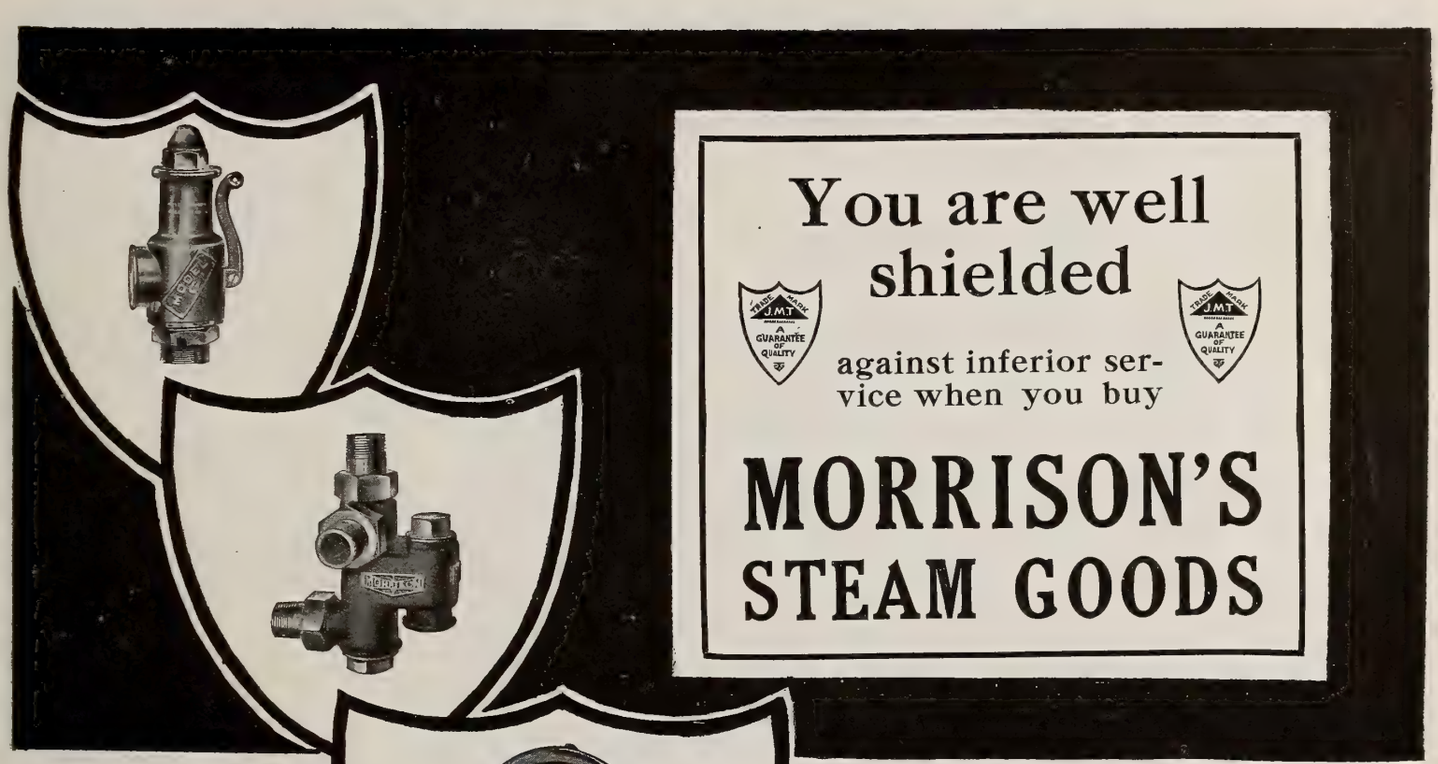
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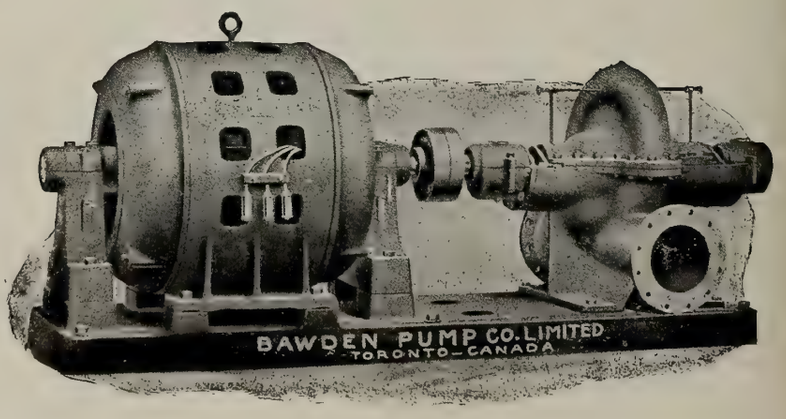
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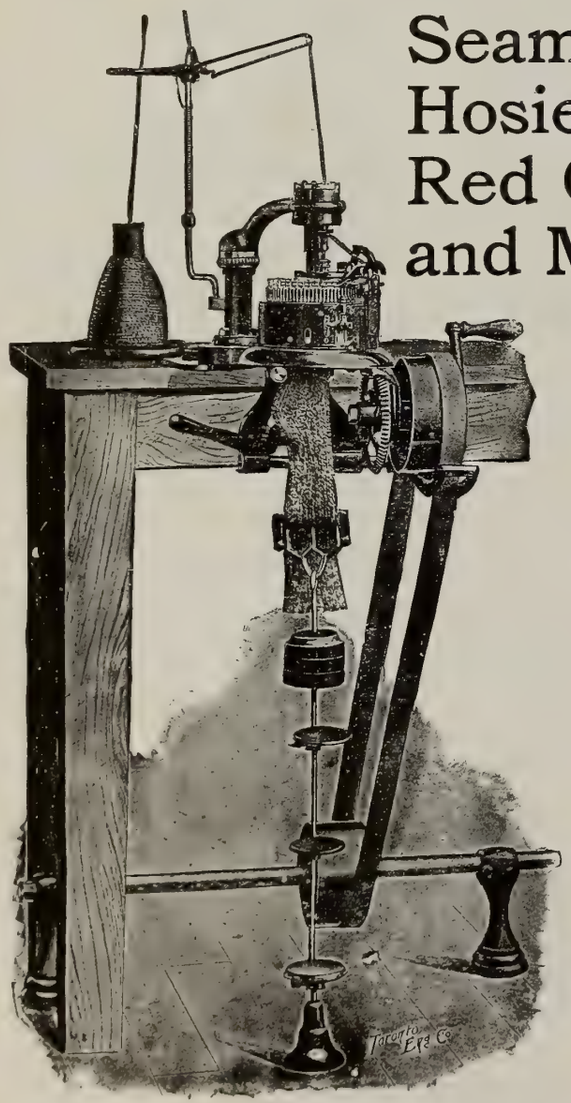
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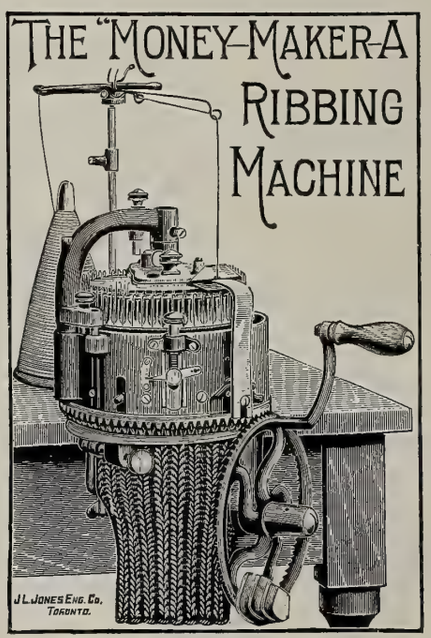
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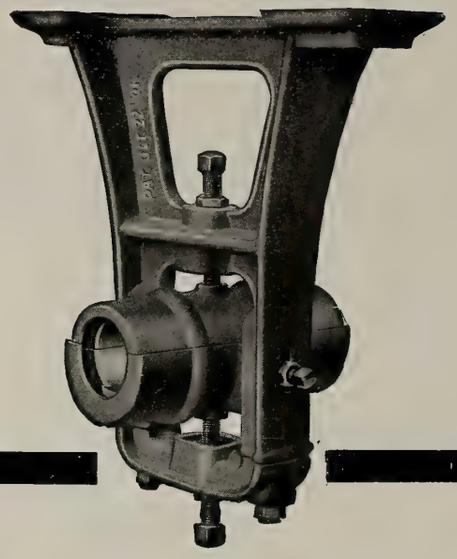
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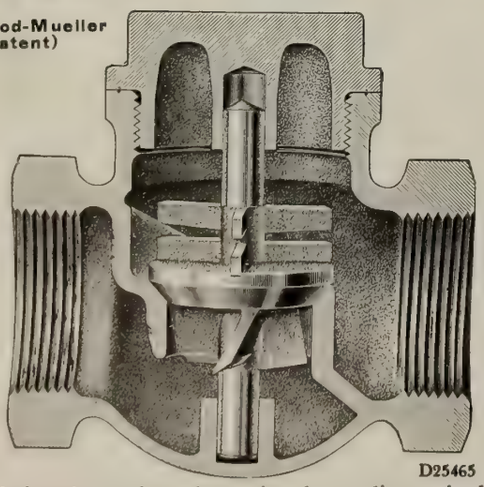
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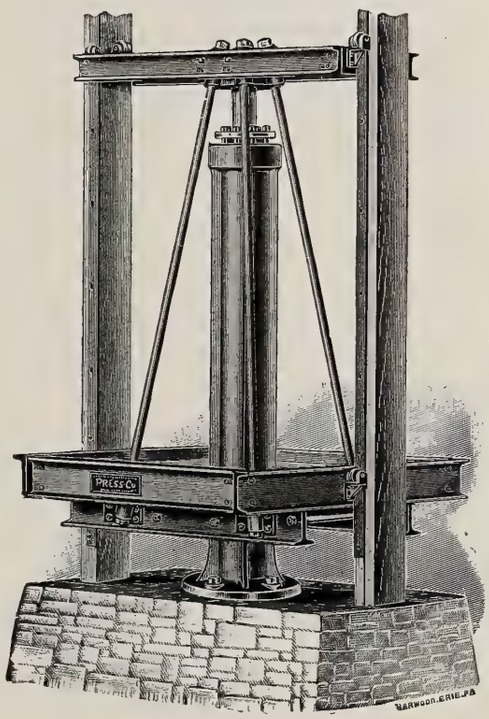
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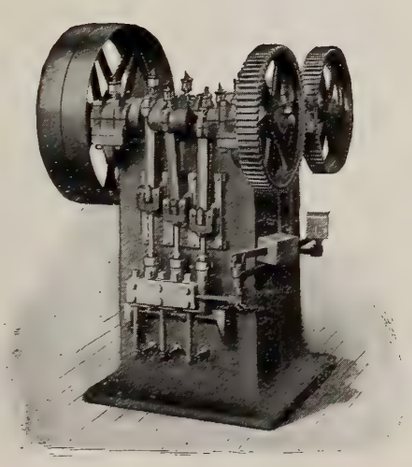
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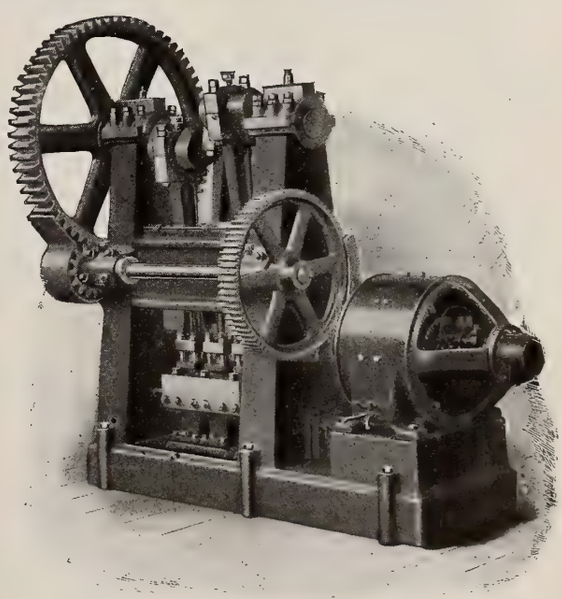


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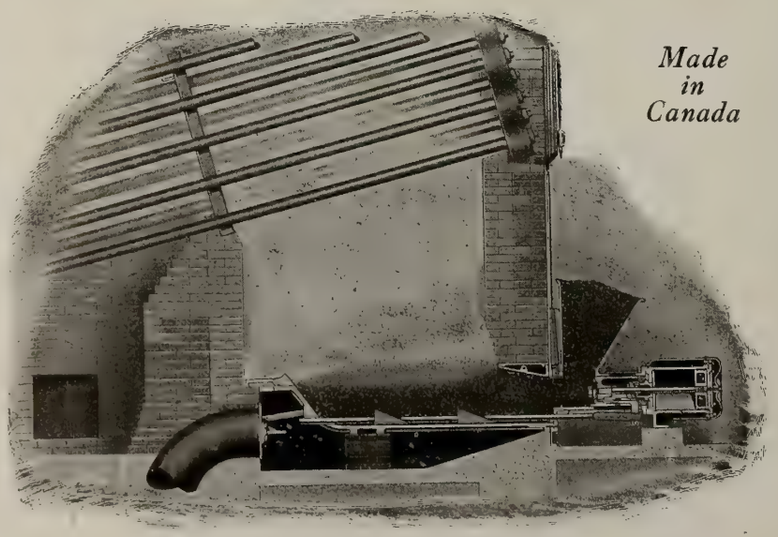
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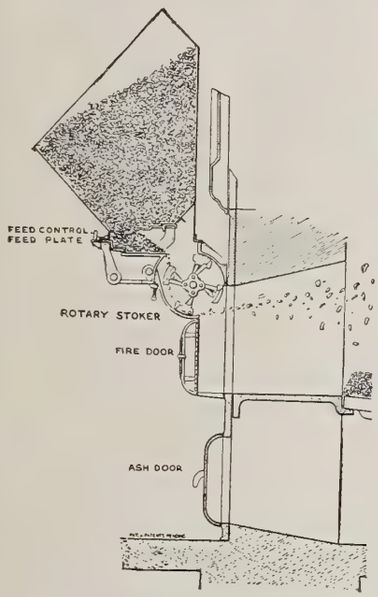
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Now 15% or 25% is mighty important saving, especially in consideration of the high cost of coal. In the course of a year, it will run into a saving of hundreds of dollars even in a plant of moderate size.

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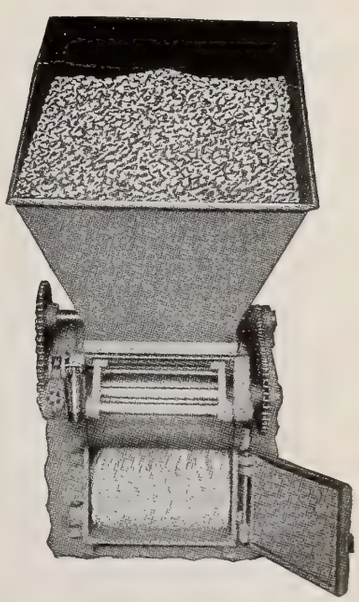
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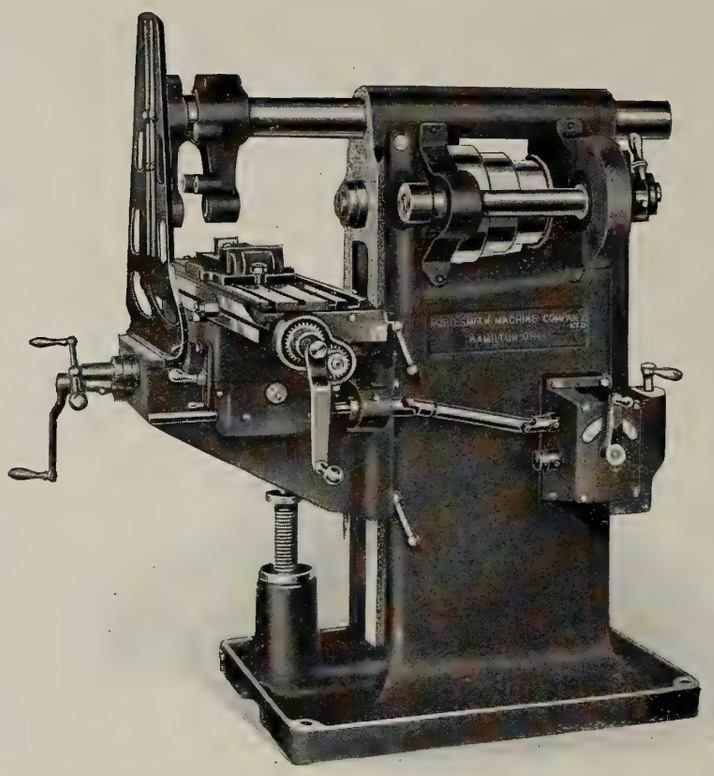
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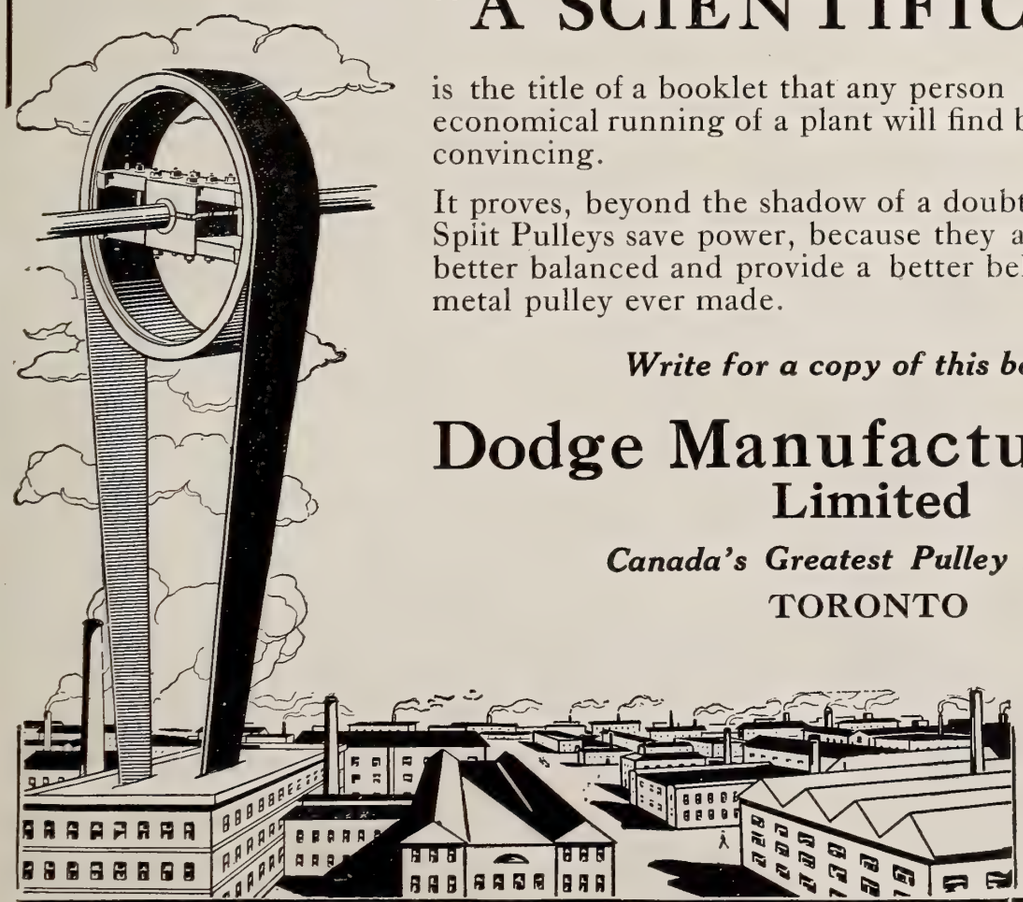
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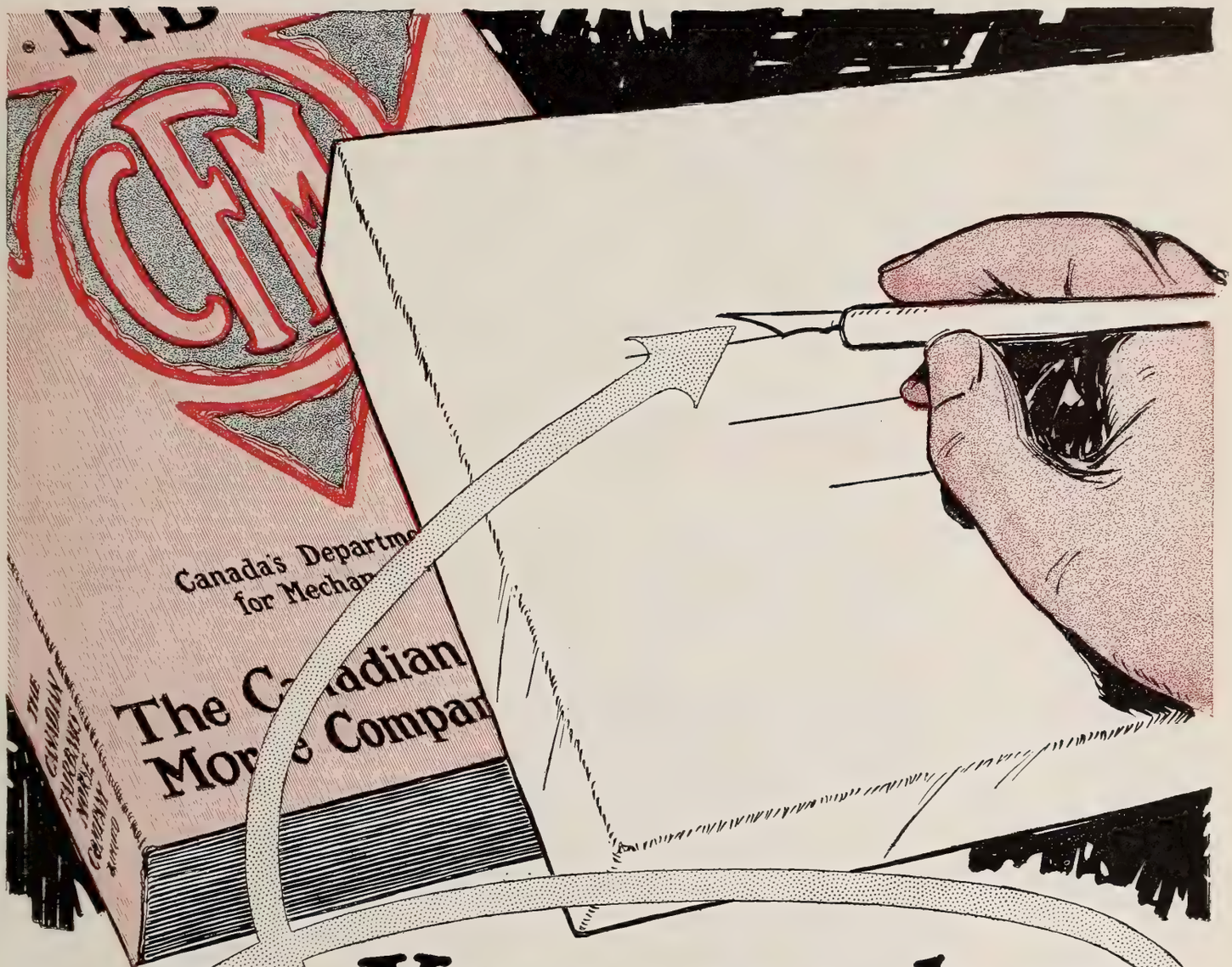
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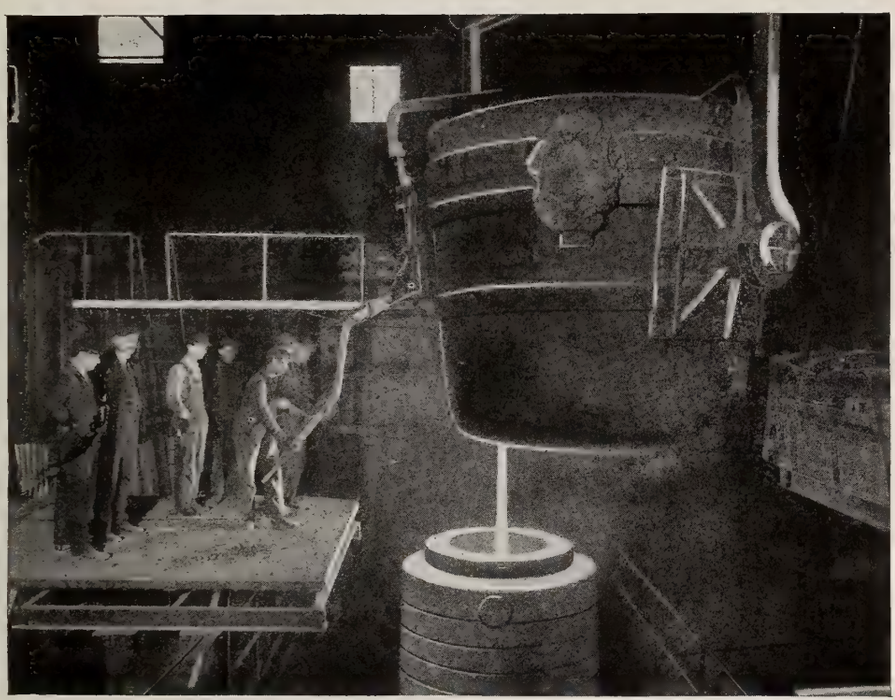
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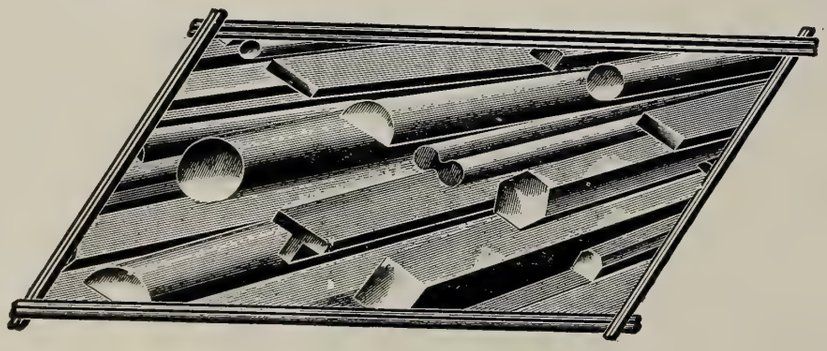
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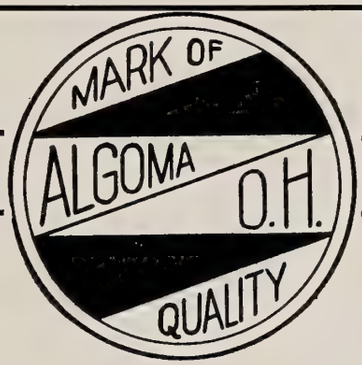
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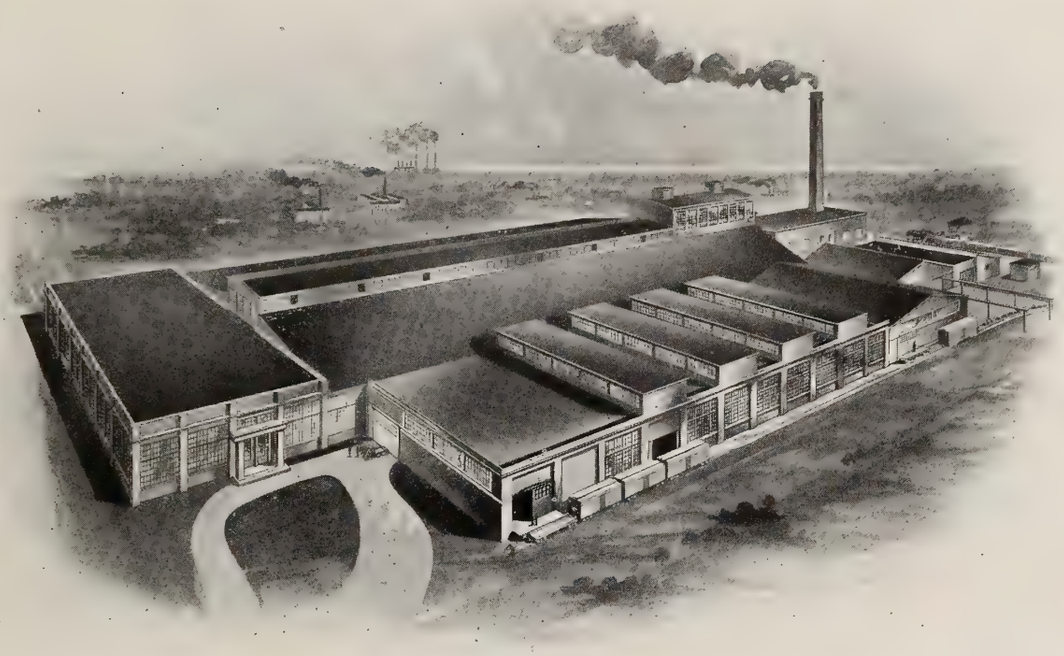
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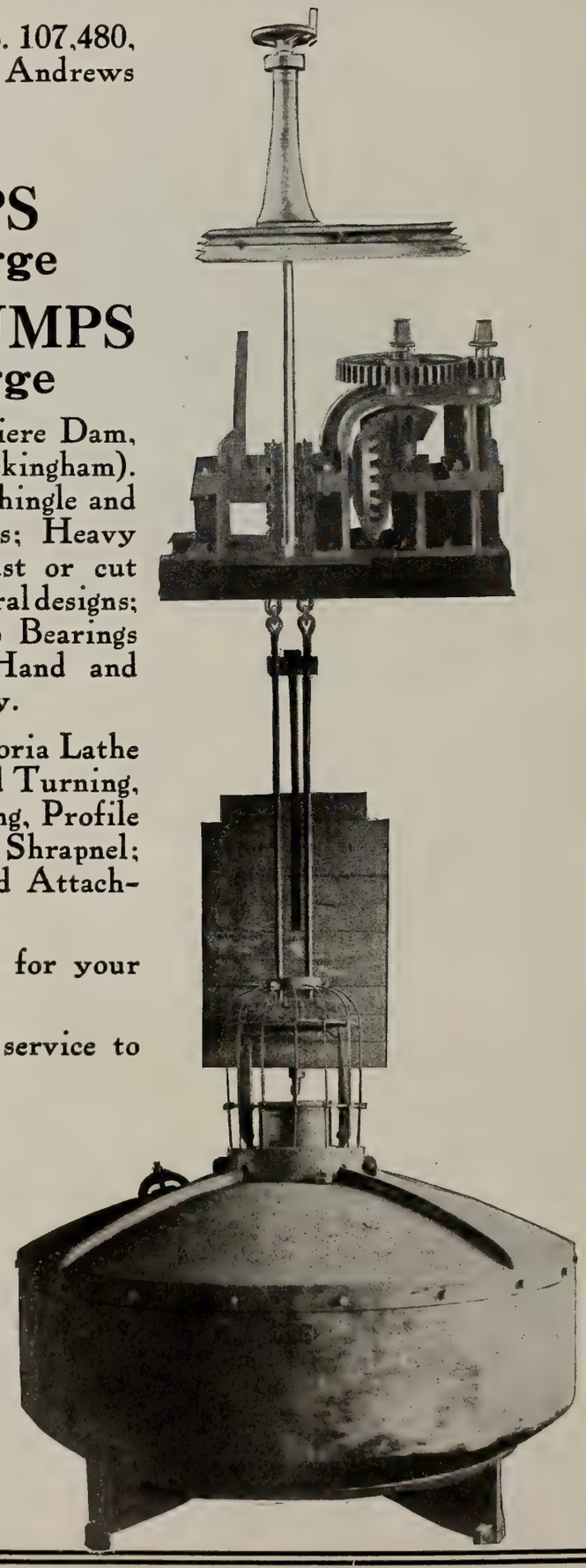
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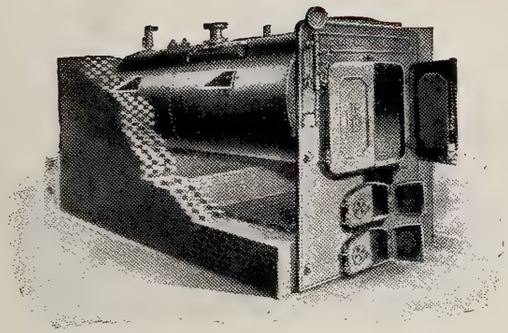
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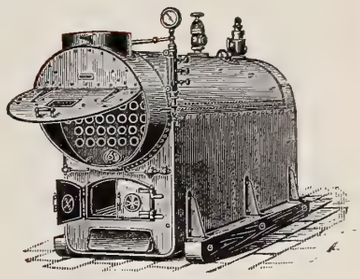
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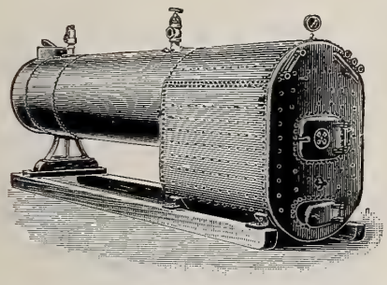


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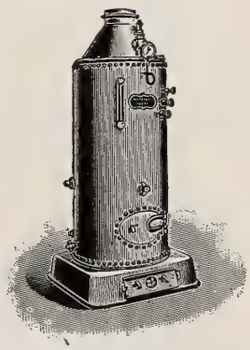
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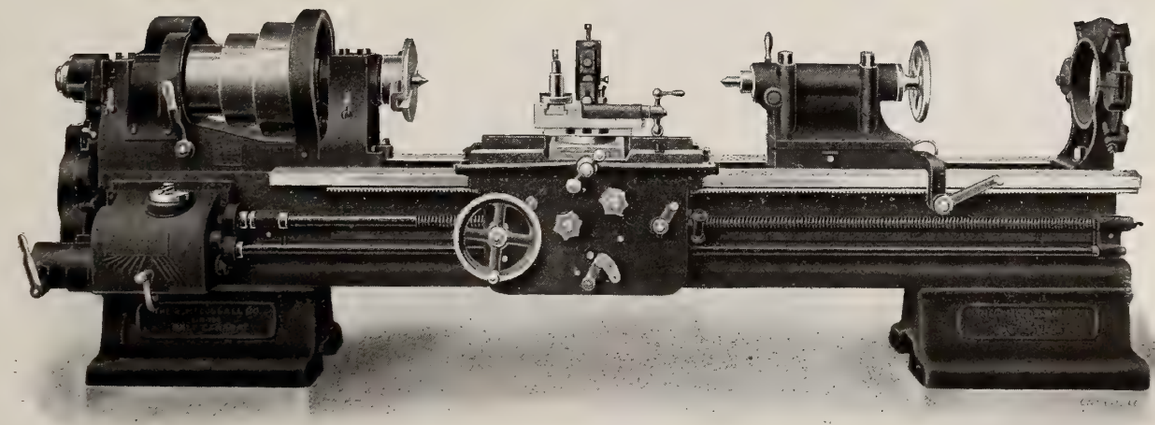


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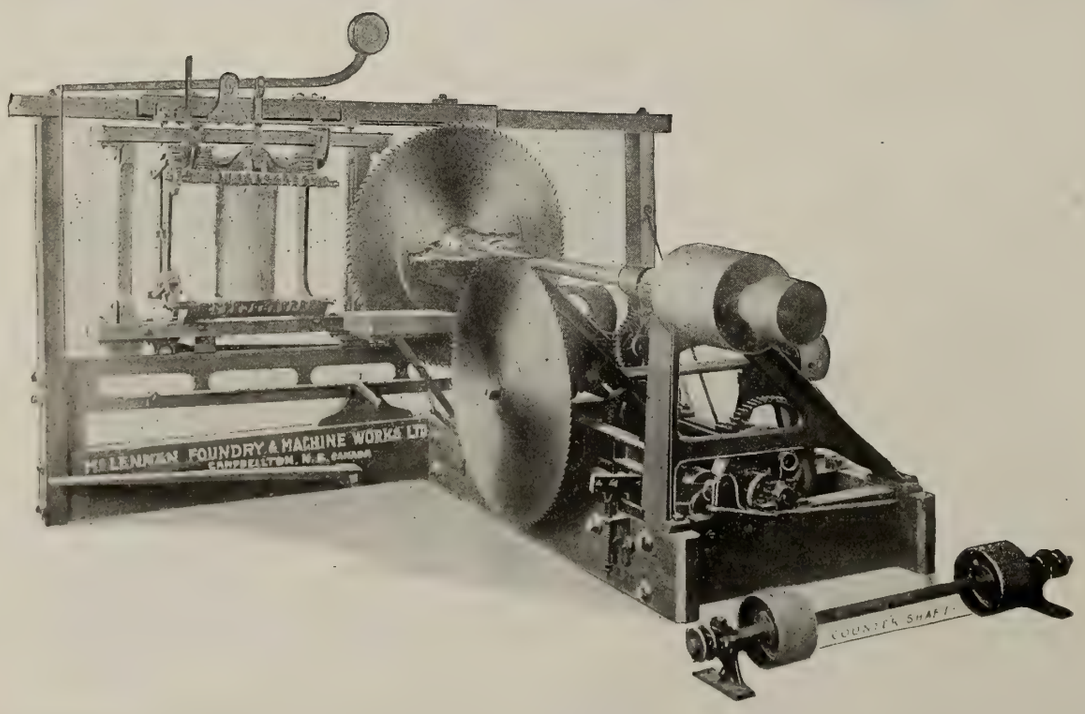


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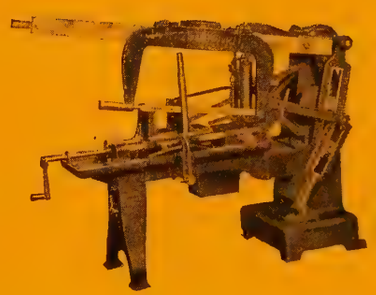
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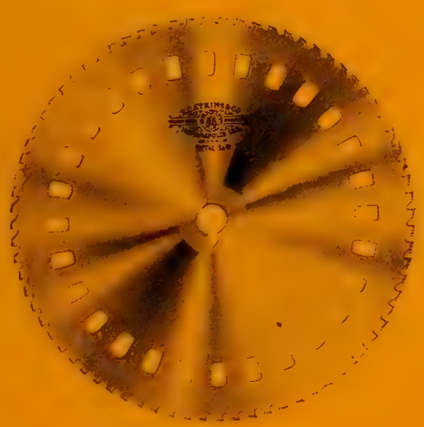
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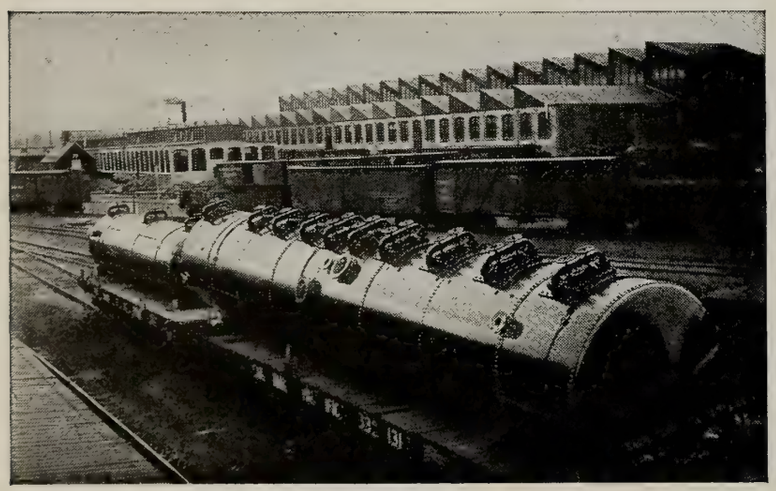
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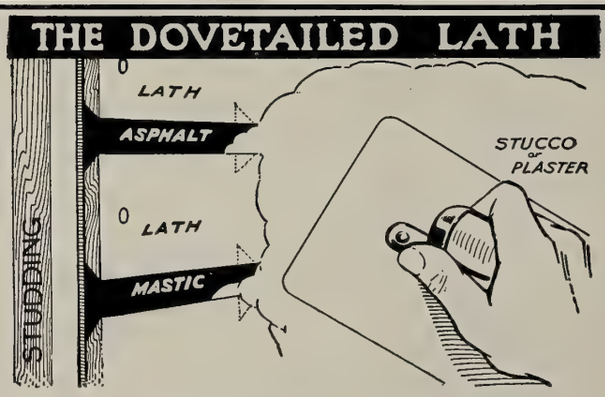
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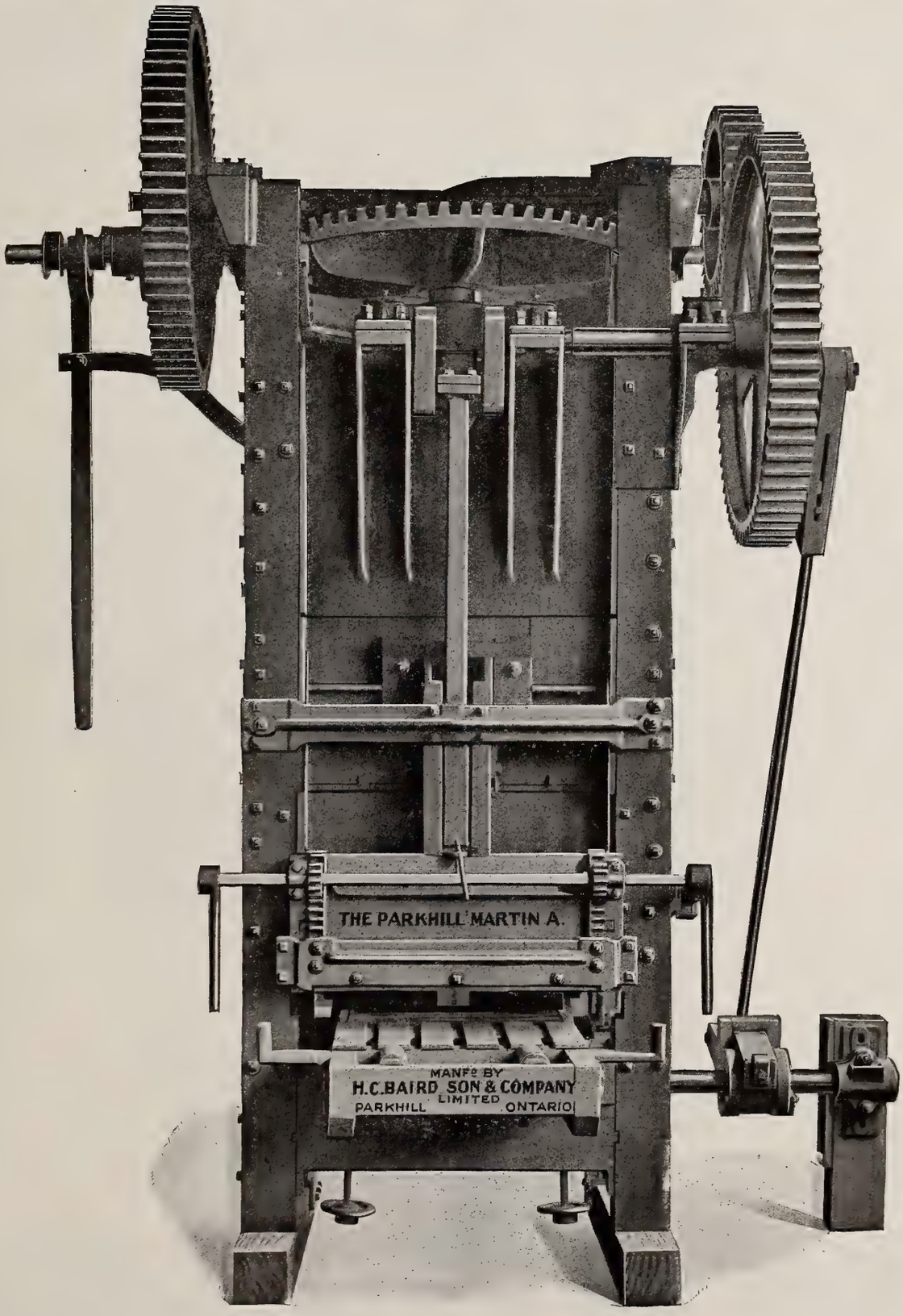
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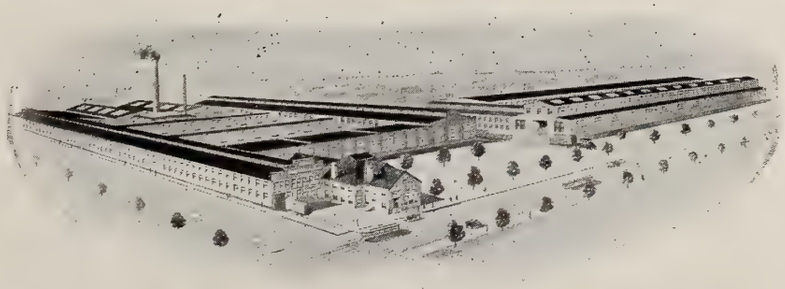
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Domestic and Export Orders Solicited



Our No. 2 Mill and Yards on the Nepisiguit River, showing steamer loading for France

The First Big Lumber Contract

was placed when Noah undertook to build the Ark The contract called for over 3,000,000 ft. of Lumber

It took Noah & Sons 120 years to cut, haul and build their material.

A modern sawmill would have saved them at least 118 years on the job.

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Veneered PANELS

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Sewing Machine Woodwork and Other Specialties

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BEAVER FLOORING BRAND

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We can supply any quantity of flooring for new buildings, residences, or factory repair work.

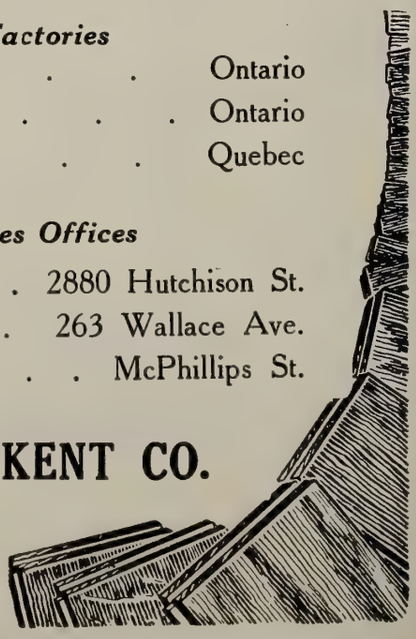
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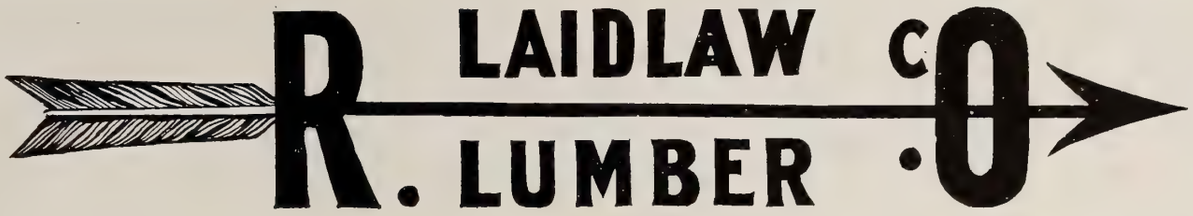
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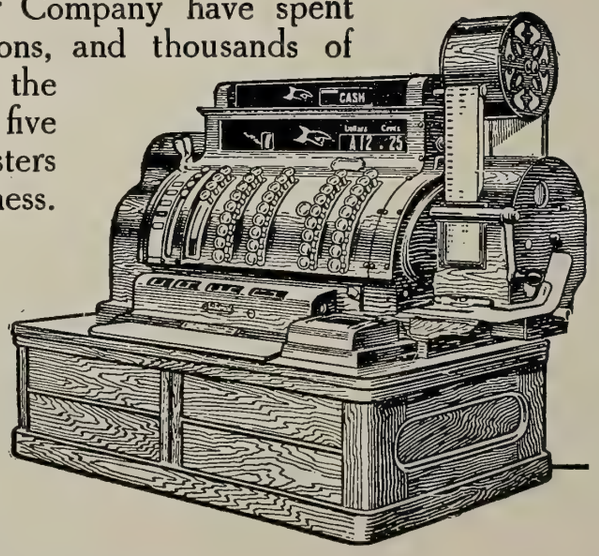
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Ice Machines
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USED EVERYWHERE

Need of System

IT is a significant fact that the majority of retail businesses that fail are forced out of line by bad management. It is becoming more and more evident that the retail merchant needs training; in other words, needs system. More than one-fifth of all failures in the retail world can be traced directly to incompetence or bad management. It is therefore to the interest of every manufacturer to urge his customers to be systematic—to install some system in their stores which will give them a control over their business.

THE National Cash Register Company have spent years in perfecting inventions, and thousands of dollars in perfecting systems for the retail merchant. They make over five hundred different types of registers which can be adapted to any business.



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The National Cash Register Company of Canada, Limited

TORONTO - ONTARIO



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EFFICIENCY DESK

THIS new Efficiency Desk revolutionizes Business Executives, ideas of desk comfort and working ability. It is a desk combining all the pleasant advantages of a high grade flat top desk, with filing features otherwise only procurable in a separate stack of Filing Cabinets.

Think of the wonderful convenience of having correspondence papers (letter or cap size) *filed in classified order* in a specially designed drawer *right at your side, in your desk.* Drawers for business data recorded on Cards, too, right at your fingers' ends. The centre drawer has ingeniously devised spaces and trays for the arrangement of miscellaneous business tools every man always has at his service.



The Office Specialty Efficiency Desk has the conveniences of a Desk and the capacity of a large Filing Cabinet combined at the price of the Desk alone.

Every File drawer rolls in and out on Office Specialty Frictionless Drawer Slides, which give smooth easy action under all circumstances.

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Wouldn't YOU accomplish more at an Efficiency Desk?

Learn full particulars from Folder No. 1835 — sent on request.

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Largest Makers of Filing Devices and Office Systems in the British Empire

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Please send, without obligation, particulars on Efficiency Desks ☐; Office Specialty Filing Cabinets, Wood ☐ Steel ☐; Record Safe ☐; Card Record Desks ☐; Direct Name System of Vertical Filing ☐; Half Sections ☐; Trucks ☐; Card Index Cabinets ☐

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Make it necessary for modern business to apply more efficient methods to counteract the increased cost of production.

In our business we have anticipated this need and to-day

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TELL HIM WELL

CATALOGUES, nowadays, are known to pretty well represent the goods

Expensive gowns are never displayed on low-class models. Really good chocolates are never sold in shabby boxes.

The Point: Your CATALOGUE should worthily represent your products. When you tell him about them—TELL HIM WELL.

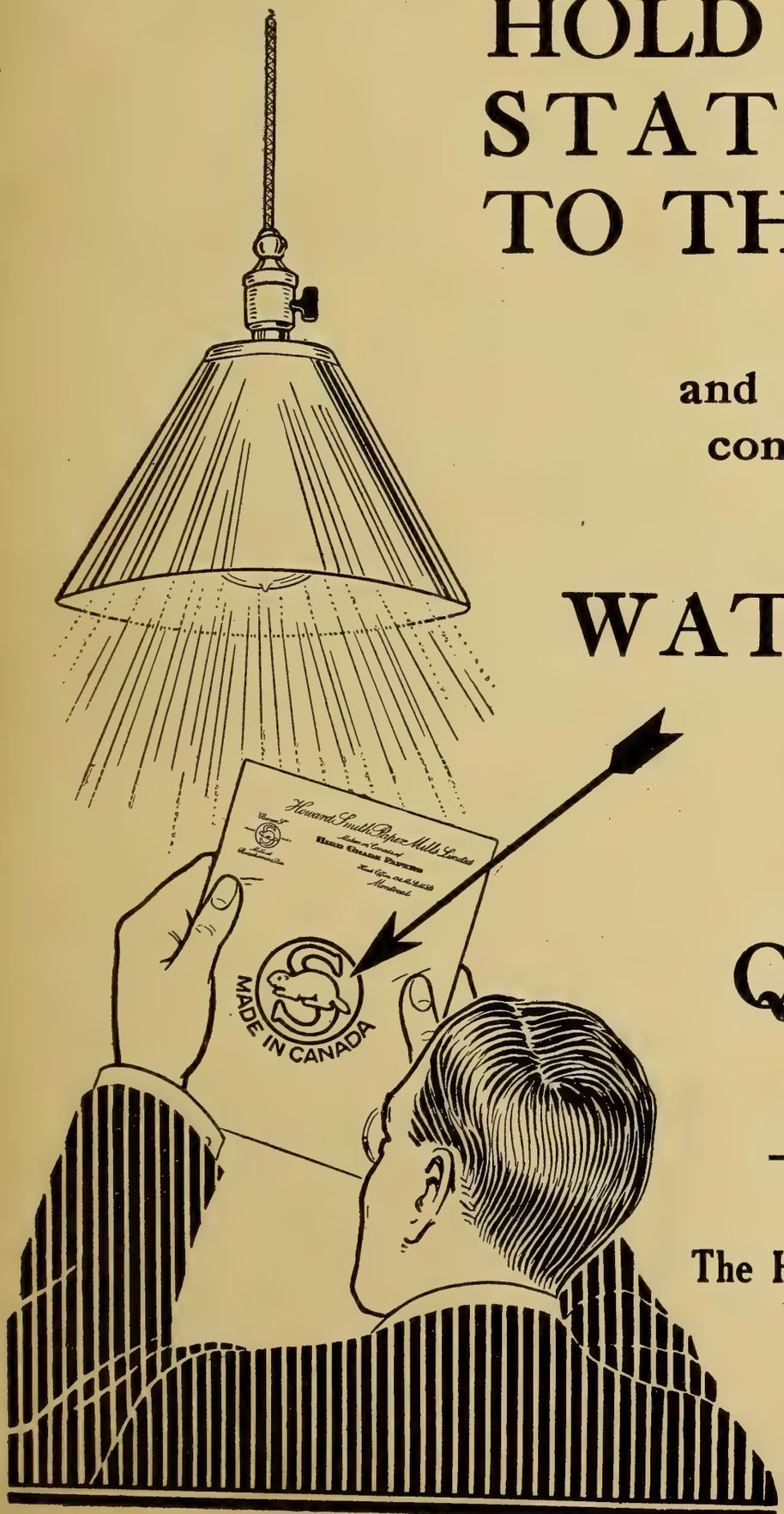
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It is your guarantee for

QUALITY

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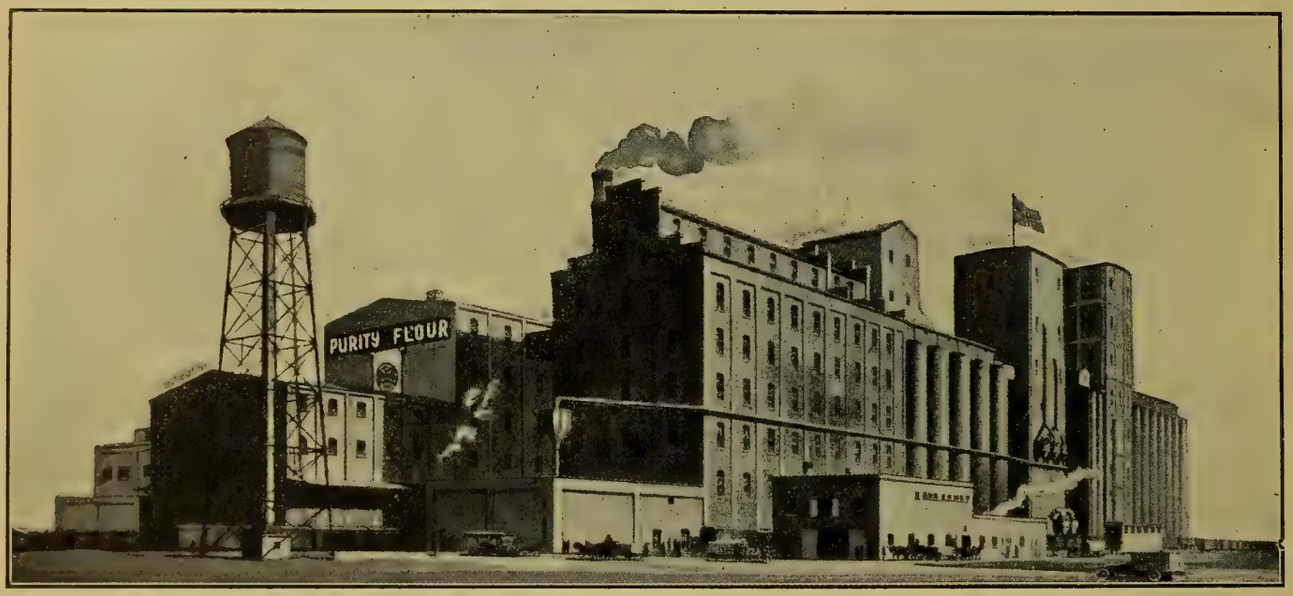
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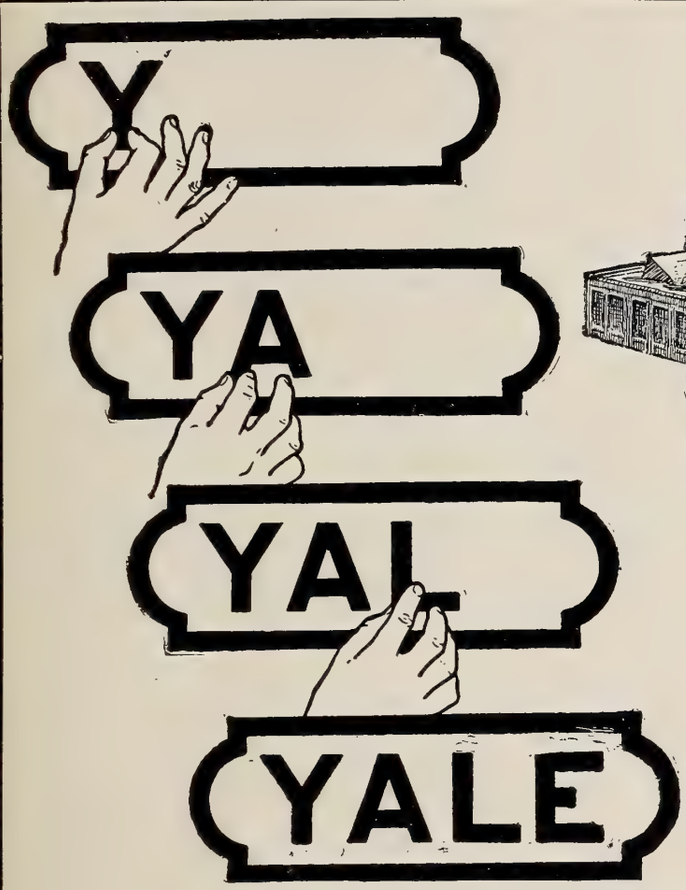
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A CANADIAN PLANT



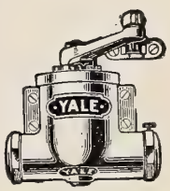
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The Yale Ideal of enduring and satisfactory service has been built into every Yale product since 1869.

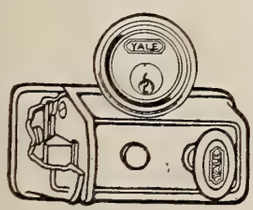
The presence of that name Yale upon locks and hardware is a visible guarantee of real security, artistic decoration, and provable durability.

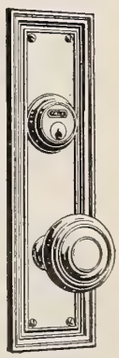


Yale Products are Made in Canada

Look for the name "Yale" on the locks and hardware you buy.

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Malleable Iron Castings

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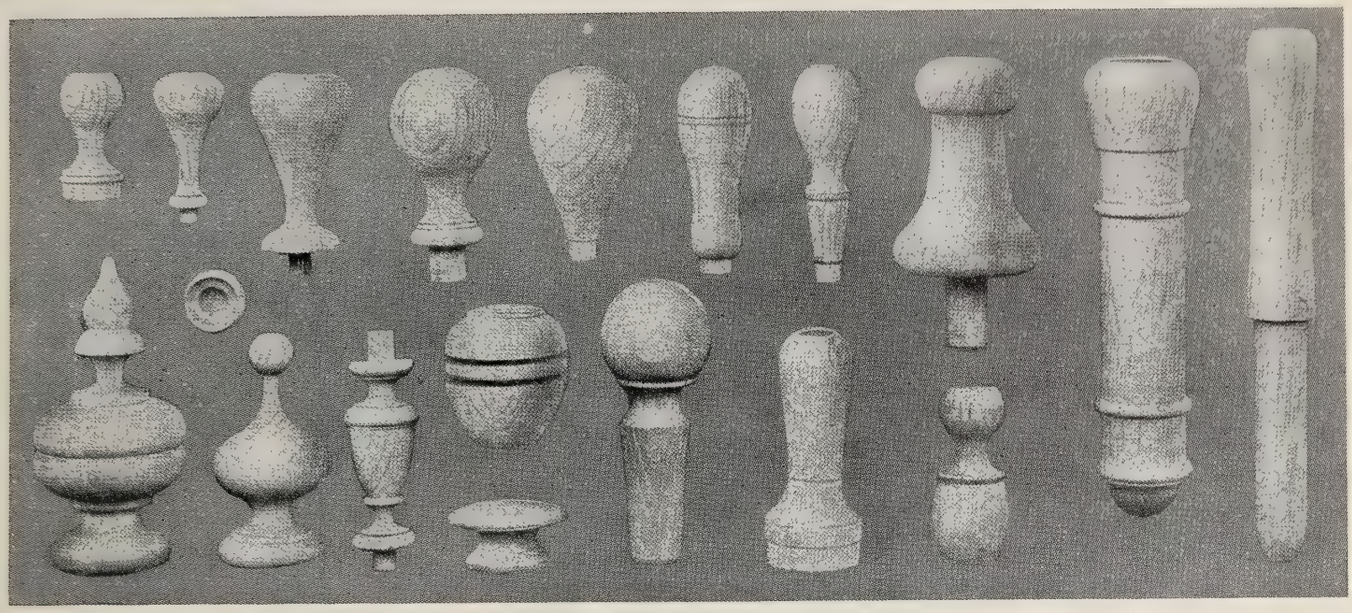
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We carry a large stock of blanks of the various sizes and can fill all orders promptly.

Old plates reclosed and recut by our process are practically as good as new and give better results than by any other process.

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FACTORY: LENNOXVILLE, QUE. OFFICES: Lennoxville, Que. Fitchburg, Mass., U.S.A.



Dowels and Wood Turnings

Those Smooth Dowels

The new dowel machine is a wonder for efficiency. The new process dowel made from it is round. Always round. There is nothing about the manufacturing process which could produce anything but a round dowel.

It is also always uniform in diameter and never varies more than a few thousandths of an inch from the measurements desired. The dowel is finished and polished with a clean cut lengthwise of the grain and not with a scraping cut crosswise of the grain, as in the old method.

These machines are adjustable to any size from 3/16 of an inch to one inch, making these changes as fine as to a 64th of an inch. Our smooth dowels are straight, round and perfect.

Special Shapes

We show above a few of the many shapes which we can turn out with our special automatic machinery.

We are in the centre of the hardwood district and can turn out any shape wanted, in any quantity, perfect and smooth, at short notice. Write us about anything which you may need that can be turned out of wood.

Dowels the Smooth Kind

Birch, Beech and Maple
Plain, per 1,000 Pieces

Length	3-16 in.	1-4 in.	3-8 in.	1-2 in.	5-8 in.
12 in.	$1.50	$1.50	$1.80	$2.20	$2.95
16	1.95	1.95	2.40	2.95	3.93
18	2.20	2.20	2.67	3.35	4.40
24	2.95	2.95	3.60	4.40	5.90
27	3.35	3.35	4.05	5.00	6.60
30	4.05	4.05	5.00	6.16	8.20
33	4.50	4.50	5.50	6.75	9.00
36	4.95	4.95	6.00	7.33	9.80
42	5.70	5.70	7.00	8.60	11.50
48	6.50	6.50	8.00	9.80	13.05
54	9.20	9.20	11.20	13.80	18.40
60	11.25	11.25	13.75	16.85	22.50
66	13.05	13.05	16.00	19.55	26.05
72	14.75	14.75	18.00	22.05	29.40
No. dowels to bundle	1000	500	200	200	100

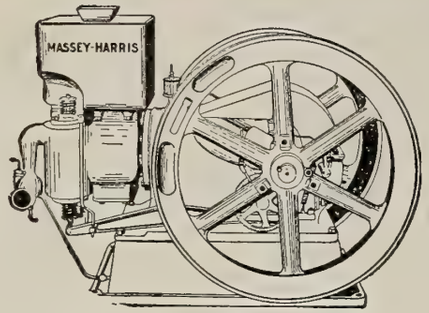
Besides the above sizes, we make dowels up to 1 in. or any fraction thereof. In addition to the smooth kind we make the glue joint dowel in all sizes.

Tell us your wants and get our prices.

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FARM POINT, P.Q., CANADA

Makers of Wood Products and Toys



MASSEY-HARRIS ENGINES are good all the way through

¶ Every detail has been worked out with the greatest care --- nothing has been slighted, either in the design or construction, and as a result they have won an enviable reputation for reliability and efficiency.

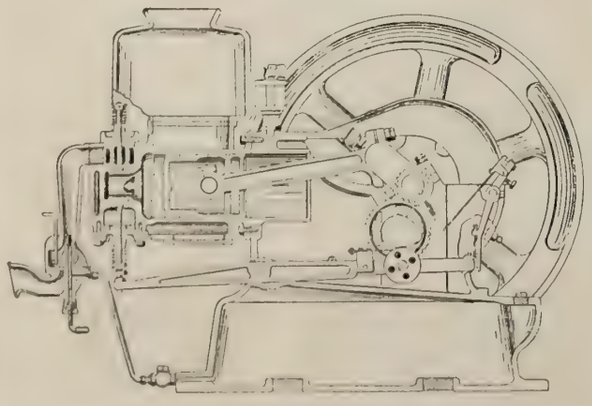
¶ One of these engines affords a convenient source of power, always ready, winter or summer, and costs nothing for keep when not in use.

¶ Made in sizes from 1½ to 20 h.p., stationary, portable or semi-portable.

¶ Full information on request.

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Agencies Everywhere



HINMAN
THE UNIVERSAL MILKER

Over 26,000 Sold



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HINMAN MILKERS

Are Bought by the Shrewdest Buyers Milking the World's Best Cows.



The HINMAN is a Simple, Efficient and Safe Machine, Requiring Small Power to Operate and Enabling One Man to do Three Men's Work.

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The Largest Exclusive Milking Machine Manufacturers in Canada.

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The Motors of Constant Service. Absolutely Guaranteed.

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The lightest running Blowers made.





— The Hylo Silo —

Entirely different and infinitely superior.

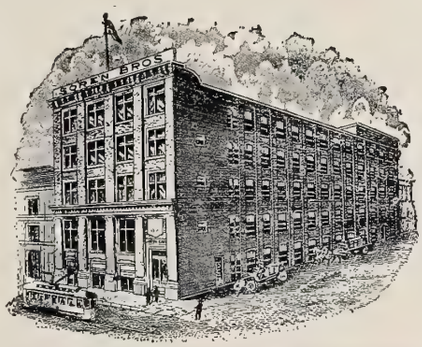
Gilson Manfg. Co., Ltd.
2590 YORK ST. - GUELPH, ONTARIO

SOREN BROS.

545-547-549 King St. W., TORONTO

WHAT WE MAKE

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We built this factory for our own very extensive business. Visit us. Just two blocks west of Spadina Ave. Our building has a striking white stone front.

BESIDES what we make regularly and carry in stock, we make any special lines that the trade may wish — private brand lines, if desired.

Any jobbing house or large retailer, or contractor or canner requiring special goods is invited to correspond with us, to get quotations, etc.

Anything in the nature of stamped, pieced, japanned or galvanized tinware, we can make

Domestic Tinware of All Sorts

"FROST KING" All-Metal Refrigerator

"DAISY" Ash-Sifter

We are the holders of the Canadian patents for the "FROST KING" All-Metal Refrigerator and "DAISY" Ash Sifter

THE two specialties named above are money-makers for the trade. The FROST KING Refrigerator is made entirely of metal, and weighs much less than wood refrigerators of equal capacity. Send for special circular. The "DAISY" Ash-Sifter requires no introduction to the trade. It is known everywhere, and every season sees an immense sale for it. Send for our complete catalogue.

TINWARE

STAMPED - PIECED - JAPANNED - GALVANIZED

Play Fair With the Farmer

The Dominion recently spent a large sum of money in publicity to attract 50,000 farm workers to Canada. That was wisely done. We need the men and there is no better way to get them.

But if our farm workers, old and new, are to be of the most value to us in the present food crisis, they must be supplied with modern farm machines. Men cannot work Canadian farms with rakes and hoes, sickles and flails. They need tractors, engine plows, disk harrows, cultivators, binders, threshers, and they need these machines in enormous quantities. The records of Canadian farms show that each farm worker produces as much or more foodstuff as any farmer in the world. He does it by the use of machines that eliminate human labor and reduce farm expenses.

The machines our farm workers need and must have can be made and should be made in Canadian factories. Needless to say, it was never so important before that these factories should be running full time, and even overtime, so that every Canadian farmer may be able to secure, when he needs it, any machine necessary to the best preparation of his land; the surest seeding of his fields; and the full, complete harvesting of all his crops. No other one factor is so important to the fullest success of Canadian farming in 1917.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man.; Calgary, Alta.; Edmonton, Alta.; Estevan, Sask.; Lethbridge, Alta.; N. Battleford, Sask.; Regina, Sask.; Saskatoon, Sask.; Winnipeg, Man.; Yorkton, Sask.

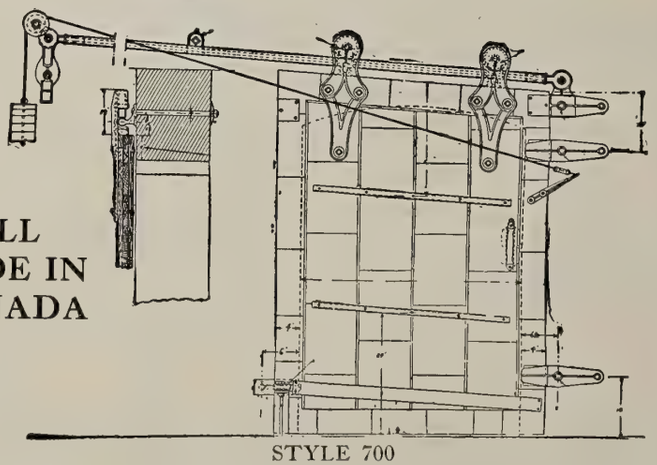
EAST—Hamilton, Ont.; London, Ont.; Montreal, Que.; Ottawa, Ont.; Quebec, Que.; St. John, N.B

ALLITH MANUFACTURING CO., Ltd.

HAMILTON - CANADA



ALL MADE IN CANADA



STYLE 700

Allith Fire Door Hardware is inspected and labelled by Underwriters' Laboratories (Inc.)

SAVE MONEY and SECURE MAXIMUM PROTECTION by SPECIFYING ALLITH LABELLED FIXTURES for your Fire Doors.

Write us for prices on Parallel Door Equipment for your Heavy Warehouse Doors

We Make all Styles of Door Equipment



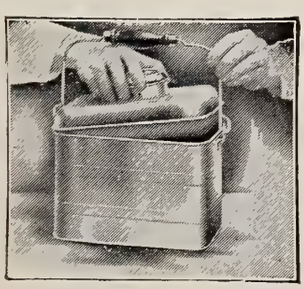
"CANUCK" BREAD MIXERS
Home bread-making is one of the greatest factors in reducing the home expenses.



FIRE BUCKET TANKS
The cheapest and most efficient method of fire protection for factories and warehouses.



OILY WASTE CANS
One of the protective measures required by fire underwriters.

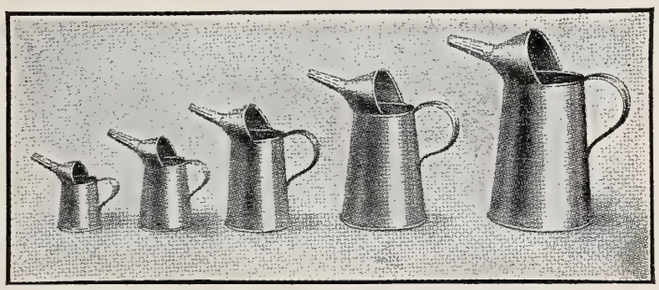


"PRISCO" DINNER PAILS
In styles, sizes and prices to suit everyone.

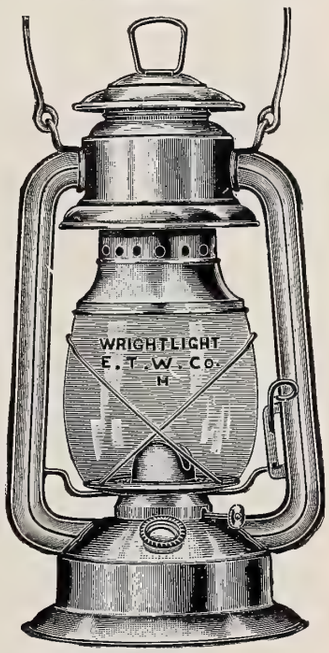
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We make thousands of things that will interest you. Send your enquiries to us. We have the goods, and will give prompt service.



AUTOMOBILE ACCESSORIES
Funnels, Measures, Carriers, Strainers. All the Tinware Equipment for the autoist.



Ask for Our Illustrated Catalog and Prices

No Enquiry is Too Small for Our Attention

We are here to answer questions and help you in your business.

LANTERNS
For the watchman, warehouseman, engineer, fireman. A full assortment, oil and electric.

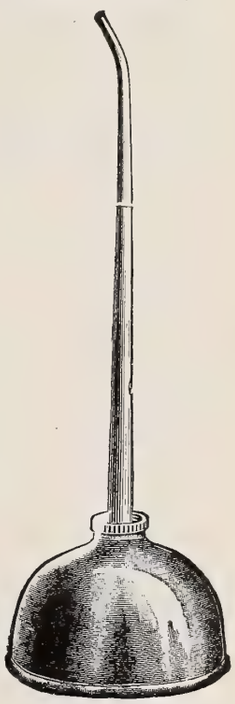


JAPANNED LUNCH BOXES
One of our most popular lines.

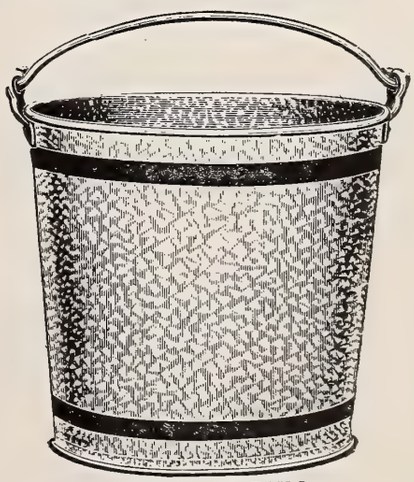
E. T. Wright Co., Limited
HAMILTON - CANADA



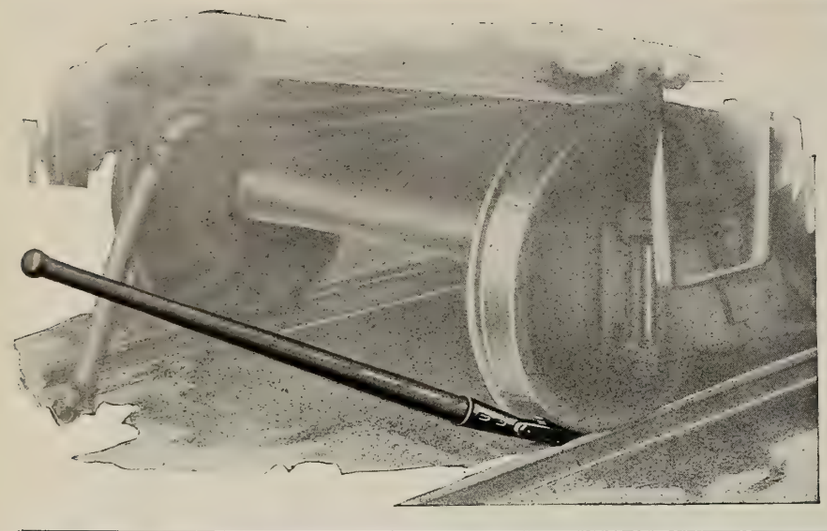
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Large mouth style—Plain, Coppered or Japanned.



MACHINE OILERS
Let us quote you on these.



GALVANIZED PAILS
Light and heavy—straight and flaring—small, medium and large.



The "SAMSON" Railway Car Mover

Your equipment is not efficient unless you have one of these tools. One man can easily move any car, on any siding. The only Canadian Made Car Mover.

Let us send you one on 10 days' Free Trial.

DILLON MFG. CO., - OSHAWA, ONT.



CANADIAN WIRE ROPE

MANUFACTURED BY

The DOMINION WIRE ROPE COMPANY, Limited

Branch: Mail Bldg., TORONTO. Head Office: MONTREAL.

THE DE LAVAL LINE OF CENTRIFUGALS

De Laval Oil Reclaimers
From exhaust steam condensate.

De Laval All Disc Clarifier
Removes sediment from varnish, Japans, lacquers, demars, printing and lithographing ink, edible and lubricating oils.

De Laval Clarifier and Filter
Removes sediment and flock from varnishes, oils, pharmaceuticals, fruit syrups and extracts.

De Laval Emulsor
Emulses chemicals, medicines and milk components for cream production.

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THE DE LAVAL COMPANY
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Highest Ideal of the Shovel Making Art

For Strength
And Durability

BULL DOG AND FOX
SOLID SHANK SHOVELS

HAVE NO EQUAL

Stocked by all Jobbers



Brands:

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SCOOPS
MOOSE AND BLACK CAT

The Canadian Shovel & Tool Co. Limited
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Reamers Cap Screws

Set Screws Engine Studs

Cold Pressed and Steel Nuts of Every Variety and Finish


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Washer Head


Square Head

STANDARD MACHINE SCREWS

Round, Flat, Fillister, Binding and Button Head

STANDARD RIVETS IN BRASS AND COPPER

Belt Rivets, Boat Rivets, Flat and Round Head

Special Machine Screws and Rivets in Brass, Copper Aluminum, Bronze and Steel

Brass and Copper Plating

THE STOWELL SCREW COMPANY
LIMITED

ST. HENRI, MONTREAL

Using Them for Fifty Years

Many firms have been using the "Famous Five" Files for half a century.

Their efficiency has become a tradition.

They are made from high carbon steel, scientifically heat treated and ground accurately by machinery.

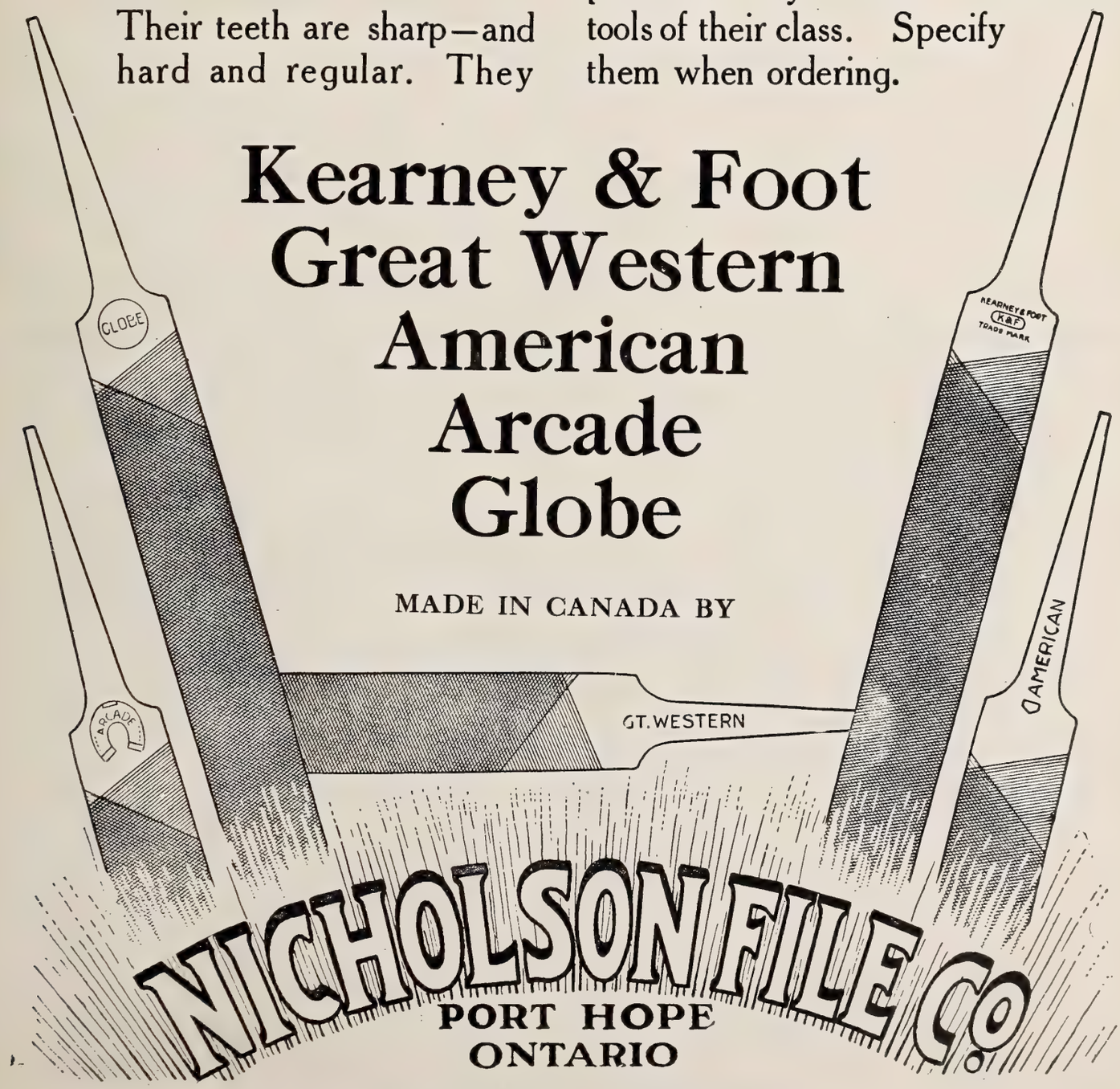
Their teeth are sharp—and hard and regular. They retain their edge for a long time.

Consequently they are economical to use.

In short—the qualities of "Famous Five" Files have been kept abreast of the demands of modern shop practice. They are now the Standard tools of their class. Specify them when ordering.

Kearney & Foot
Great Western
American
Arcade
Globe

MADE IN CANADA BY



NICHOLSON FILE CO.
PORT HOPE
ONTARIO

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FIBRE CANS

FIBRE BODY CANS WITH METAL ENDS

For All Sorts of Dry Products

WINNIPEG
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MONTREAL

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Canadian Meter Co., Ltd.

Manufacturers of

METERS

For Acetylene, Coal, Gasoline and Natural Gases, also for Air

Office and Works:
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90 CAROLINE ST. N.

ESTABLISHED 1875

Freyseng Cork Co., Limited
TORONTO - MONTREAL

MANUFACTURERS AND IMPORTERS OF

CORKS

Hand Cut—Machine Cut

BOTTLERS' SUPPLIES
Prescription Corks a Specialty

Corking Machines
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Bottle Capsules
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Excelsior Bottle Wrappers
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THE BREITHAUPT LEATHER CO., LIMITED

Founded 1857

Tanners
OF
Six Tannages of Sole Leather

HEMLOCK — "Penetang" "Eagle"

UNION — "Kitchener"

OAK — "Trent Valley" "Royal" "Lion"

Sole Leathers for All Requirements

Tanneries at KITCHENER, PENETANG, HASTINGS AND WOODSTOCK, ONT.
Offices and Distributing Warehouses: MONTREAL AND QUEBEC
HEAD OFFICE - KITCHENER, ONT.

"There is Nothing Like Leather"

BARRIE TANNING COMPANY LIMITED

MANUFACTURERS OF

STAPLE AND FANCY **LEATHERS**

RUSSET SIDES AND SPECIALTIES

SHOE
BAG
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TRUNK
STRAP

LEATHERS

HARNESS
BRIDLE
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HIDES ALL SPECIALLY SELECTED

UTMOST ECONOMY IN CUTTING

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ACIDS
All Strengths
Sulphuric (Commercial and Chemically Pure)
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Anhydrous Ammonia
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Soldering Flux
Tinning Flux
Zinc Chloride
Ammonia Chloride (Sal Ammoniac)
Silicate of Soda

Bicarbonate of Soda
Caustic Soda
Hypo Sulphite of Soda
Sulphide of Soda (all forms)
Bi-Sulphite of Soda
Soda Ash
Chloride of Lime
Calcium Chloride
Epsom Salt

Bi-Sulphate of Soda (Nitre Cake)
Magnesium Chloride
Phosphate of Soda
Copperas (Crystal and Sugar)
Bi-Chromate of Soda
Sulphate of Alumina
Tri-Sodium Phosphate
Titanium Oxalate

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Logwood
Logwood 51′ for cotton
Hematine Crystals
Fustic (all forms)
Sulphur Black Powder
Sal Soda
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Grasselli Lime Sulphur Solution and Lead Arsenate
For Tree Spraying

The Grasselli Chemical Co. Limited

HEAD SALES OFFICE: TORONTO, ONTARIO

Branch Sales Office, Montreal, Que. Works: Hamilton. Ont.

Canadian Carbonate Company, Limited

Offices and Factories:

HALIFAX, MONTREAL, TORONTO
WINNIPEG, CALGARY, VANCOUVER

Manufacturers of

"CROWN BRAND" LIQUID CARBONIC ACID GAS

GLYCERINE

LEVER BROTHERS are in a position to make prompt shipments of Glycerine for various industrial purposes, including Dynamite Glycerine, Medicinal Glycerine and Industrial Glycerine. We cater especially to

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Confectioners
Paper Makers
Leather Trades
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Etc., Etc.

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Soap and Glycerine Manufacturers

TORONTO

QUALITY AND SERVICE

Acetic Acid Refined
Acetic Acid Crude
Acetic Anhydride
Acetate of Soda
Acetate of Lime

Acetone Pure
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Charcoal
Columnian Spirits
Wood Alcohol

Creosote Oils
Formaldehyde
Methyl Acetate
Methyl Alcohol
Methyl Alcohol Pure

Made in Canada

Standard Chemical, Iron and Lumber Co.

OF CANADA, LIMITED

MONTREAL TORONTO WINNIPEG

MALLINCKRODT CHEMICAL WORKS

LIMITED

Ether
Alcohol Absolute
Collodion Flexile
Carbon Disulphide
Mercurials
Ammonia

Acid Carbolic
C.P. Acids
Pyrogallic Acid
Salicylic Acid
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ADDRESS:

Mallinckrodt Chemical Works
MONTREAL Limited

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ST. CATHARINES, ONTARIO

SMELTERS AND REFINERS OF COBALT ORES.

Manufacturers of

Bar Silver *(Electrolytically Refined)*
Arsenic, White and Metallic
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Codes:
Bedford McNeill
A.B.C. 5th Edition

BANK OF MONTREAL

ESTABLISHED 100 YEARS (1817-1917)

Capital Paid Up - -	$ 16,000,000
Rest - - - - -	16,000,000
Undivided Profits - -	1,557,034
Total Assets - - -	386,806,887

BOARD OF DIRECTORS:
Sir Vincent Meredith, Bart., President
C. B. Gordon, Vice-President

R. B. Angus, Esq. — H. R. Drummond, Esq.
Lord Shaughnessy, K.C.V.O. — D. Forbes Angus, Esq.
Wm. McMaster, Esq.
C. R. Hosmer, Esq. — Major Herb. Molson, M.C.
A. Baumgarten, Esq. — Harold Kennedy, Esq.

Head Office: MONTREAL

Gen. Manager, Sir Frederick Williams-Taylor
Assistant Gen. Manager, A. D. Braithwaite

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

Branches at all important points in Canada, and at

Agency:

NEW YORK 64 Wall St. — LONDON, ENGLAND 47 Threadneedle St. — CHICAGO 108 South La Salle St.

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

SIR JOHN AIRD, General Manager — H. V. F. JONES, Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 57

THE ROYAL BANK OF CANADA

Capital Authorized, $25,000,000 — **Reserve Funds - $ 14,324,000**
Capital Paid Up - 12,911,000 — **Total Assets - 295,000,000**

BOARD OF DIRECTORS

SIR HERBERT S. HOLT—*President*
E. L. PEASE—*Vice-President*
E. F. B. JOHNSTON, K.C., *2nd Vice-President.*

JAS. REDMOND — C. S. WILCOX
G. R. CROWE — A. E. DYMENT
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HON. W. H. THORNE — SIR M. B. DAVIS
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WM. ROBERTSON — C. C. BLACKADAR
A. J. BROWN, K.C. — JOHN T. ROSS
W. J. SHEPPARD — R. MacD. PATERSON
G. G. STUART, K.C.

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C. E. NEILL—*General Manager*
F. J. SHERMAN—*Assistant General Manager*
W. B. TORRANCE—*Superintendent of Branches*

BRANCHES

418 Branches throughout the Dominion of Canada, in Newfoundland, the West Indies, Central and South America, London, Eng., and New York, U.S.A.

Statement to the Dominion Government (Condensed) Showing Condition of the Bank on May 31, 1917.

LIABILITIES

Capital Paid Up	$ 12,911,700.00
Reserve Fund	13,471,700.00
Undivided Profits	852,346.28
Dividend No. 119, Payable June 1, 1917	387,351.00
Notes in Circulation	21,081,181.49
Deposits	237,826,543.54
Due to Other Banks	6,901,798.62
Bills Payable (Acceptances by London Branch)	727,479.61
Acceptances under Letters of Credit	754,765.41
	$294,914,865.95

ASSETS

Cash on Hand and in Banks	$58,091,611.47
Deposit in the Central Gold Reserves	9,000,000.00
Government and Municipal Securities	29,884,730.98
Railway and Other Bonds, Debentures and Stocks	12,833,881.97
Call Loans in Canada	10,955,815.14
Call Loans Elsewhere than in Canada	13,543,613.79
Deposit with Dominion Government for Security of Note Circulation	700,340.00
	$135,009,993.35
Loans and Discounts	151,266,317.44
Liabilities of Customers Under Letters of Credit as per Contra	754,765.41
Bank Premises	6,288,985.51
Real Estate Other than Bank Premises	1,594,804.24
	$294,914,865.95

A GENERAL BANKING BUSINESS TRANSACTED

THE DOMINION BANK

HEAD OFFICE, TORONTO

Capital Paid Up - - $6,000,000
Reserve Fund - - - $7,000,000

Sir Edmund B. Osler, M.P., President W. D. Matthews, Vice-President
C. A. Bogert, General Manager

BANKING BUSINESS OF EVERY DESCRIPTION TRANSACTED

The Accounts of Manufacturers, Traders and Others Carried on Favorable Terms

Commercial Letters of Credit Issued. Available in Foreign Countries

London, England, Branch: 73 Cornhill, E.C.

ESTABLISHED 1875

IMPERIAL BANK
· OF CANADA ·

CAPITAL PAID UP $7,000,000 **RESERVE FUND $7,000,000**

PELEG HOWLAND, President E. HAY, General Manager

The Imperial Bank offers exceptional banking facilities to Canadian manufacturers. Branches throughout Canada. Agents and correspondents in all the world centres.

EXCHANGE

Domestic and Foreign Exchange bought and sold.

GOVERNMENT AND MUNICIPAL SECURITIES

dealt in at all branches.

COLLECTIONS

made at all points in Canada and in foreign centres.

DRAFTS

Money Orders and Letters of Credit issued available throughout the world.

SAVINGS

received at all branches—interest credited half-yearly at current rate.

Accounts of Merchants and Manufacturers solicited.

HEAD OFFICE - TORONTO

The Merchants Bank
of Canada

Head Office	-	MONTREAL
Paid-Up Capital	- -	$7,000,000
Reserve Funds	- -	7,421,292
Total Deposits	- -	92,102,072
Total Assets	- - -	121,130,558

BOARD OF DIRECTORS

SIR H. MONTAGU ALLAN, C.V.O., President
K. W. BLACKWELL, Vice-President

THOS. LONG F. HOWARD WILSON A. B. EVANS
F. ORR LEWIS A. J. DAWES E. F. HEBDEN
ANDREW A. ALLAN F. ROBERTSON THOS. AHEARN
C. C. BALLANTYNE G. L. CAINS LT.-COL. J. R. MOODIE

E. F. HEBDEN, Managing Director
D. C. MACAROW, General Manager
T. E. MERRETT, Superintendent of Branches and Chief Inspector

A GENERAL BANKING BUSINESS TRANSACTED

236 BRANCHES AND AGENCIES IN CANADA

Extending from the Atlantic to the Pacific

SAVINGS DEPARTMENT AT ALL BRANCHES

Deposits received and Interest allowed at best current rates

New York Agency: 63 and 65 WALL ST.

UNION BANK
OF CANADA

Established 1865 **Head Office, Winnipeg**

Paid-up Capital.....$5,000,000 **Reserve Fund.....$3,400,000**

Total Assets over.....$109,000,000

TO MANUFACTURERS AND EXPORTERS

who are reaching out for greater trade, over broader territory, the Union Bank of Canada offers a comprehensive banking service, complete and efficient. This service not only covers Canada, where we have over 305 Branches, but through the Foreign Exchange Department of our London (England) Office, and the Commercial Information Bureau established at that Branch, it offers valuable assistance to Canadian Manufacturers who are selling Overseas.

LONDON, ENGLAND, BRANCHES:
6 Princes St., E.C. **Haymarket, S.W.**

BANK OF HAMILTON

HEAD OFFICE HAMILTON

Sir John Hendrie, K.C.M.G., President **Cyrus A. Birge, Vice-President**

J. P. Bell, General Manager

RECORD OF PROGRESS

Statement to the Dominion Government (condensed) showing condition of the Bank as of end of April

ASSETS	1915	1916	1917
Cash on hand and in banks, etc.	$ 7,435,966	$ 8,148,188	$ 9,089,736
Call Loans	1,461,283	3,817,585	2,616,486
Government Bonds, Debentures and Investments	3,465,372	6,294,555	11,071,045
Loans to Municipalities	2,265,797	2,137,956	1,675,393
Other Loans and Discounts	26,479,308	26,459,424	33,239,913
Premises, Real Estate, Mortgages and other Assets	2,796,170	2,869,570	2,883,208
Liabilities of Customers under Letters of Credit as per contra	134,459	158,468	162,992
	$44,038,355	$49,885,746	$60,738,773
LIABILITIES			
To the Public:			
Circulation	$ 2,476,975	$ 3,270,801	$ 3,860,551
Government Balances	969,650	1,120,901	2,838,079
Bank Balances	115,847	516,646	1,832,061
Deposits	33,584,336	38,343,109	45,535,534
Acceptances under L/C as per contra	134,459	158,468	162,992
To the Shareholders:			
Capital, paid up	3,000,000	3,000,000	3,000,000
Reserve and Surplus Profits	3,757,088	3,475,821	3,509,556
	$44,038,355	$49,885,746	$60,738,773

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - $4,866,666
Reserve Fund - $3,017,333

Statement to the Dominion Government (Condensed), 31st May, 1917.

LIABILITIES TO THE PUBLIC.

Notes in Circulation	$ 5,097,685
Deposits	54,258,876
Other Liabilities	947,825
	$60,304,386

ASSETS.

Cash on Hand and in Banks	$10,043,066
Deposit with Government o/a Note Circulation	1,385,691
Government, Municipal and other Securities	10,697,792
Call and Short Loans	8,536,819
Current Loans and Discounts and other Assets	37,126,051
Bank Premises	2,314,106
	$70,103,525

The Bank of Nova Scotia

ESTABLISHED 1832

Capital	$6,500,000
Reserve Fund	12,000,000
Total Assets	Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

UNITED STATES: Boston, Chicago, New York
CUBA: Havana
PORTO RICO: San Juan
JAMAICA: Kingston and 9 other points.
NEWFOUNDLAND: St. John's and 16 other points.

LONDON AGENTS:
The London Joint Stock Bank, Limited

With its widespread system of branches and established connections in Foreign Countries this Bank is especially well equipped to handle the accounts of exporters.

CORRESPONDENCE SOLICITED

General Office: Toronto, Canada

H. A. RICHARDSON, General Manager



DENNISTEEL LOCKERS

Are Known by the Company They Keep

WHAT better recommendation could any product have than to be used by such well-known Canadian firms as those given below:

Canadian Pacific Railway
Bell Telephone Company of Canada
Northern Electric Co., Ltd.
Hydro Electric Power Commission of Ont.
The T. Eaton Company, Ltd.
Grand Trunk Railway
Bank of Toronto
Montreal Light, Heat and Power Co.
Royal Connaught Hotel, Hamilton
Chevrolet Motor Co.
The Robert Simpson Co., Ltd.
Y.M.C.A'S all over Canada

All of these and many other concerns of equal prominence are using DENNISTEEL Lockers because of their recognized superiority. A letter addressed to us to-day will bring you a fund of valuable information.

THE DENNIS WIRE AND IRON WORKS CO. LIMITED
LONDON
CANADA

MADE-IN-CANADA
Illuminating Glassware

AT OUR FACTORY IN TORONTO

We manufacture from the raw materials a line of

Illuminating Glassware

comprising over

1,000

shapes, sizes, designs and colorings, and the line is constantly being added to.



"Moonstone," the Efficient Reflector



A Good Sample of Our "Moonstone" Semi-Indirect Bowls



Electric Shades, Many Shapes and Designs

Always insist on having Canadian-made

Illuminating Glassware

JEFFERSON MAKE

Jefferson Glass Company, Limited

Factory and Head Office:
388 CARLAW AVE. - TORONTO, CANADA

MONTREAL—Royal Trust Bldg.
L. V. WEBBER, Manager

WINNIPEG—592 Notre Dame Ave.
A. E. ESLING, Agent

VANCOUVER—606 Welton Block
R. G. MOORE, Agent

STEEL CASTINGS

Manganese, Chrome, and Nickel Steel Castings from ¼ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears any size up to 18 feet in diameter without the use of patterns

Hull Iron & Steel Foundries, Ltd.

Head Office and Works - - HULL, P.Q.

DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited

Welland, Ontario



BRASS, PHOSPHOR BRONZE, COPPER AND ALUMINUM CASTINGS

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

Write for Prices

Tallman's Reputation is in the Goods

Tallman Brass & Metal Co.
HAMILTON, ONT.

JOLIETTE STEEL

Dependable Service For All Who Buy STEEL CASTINGS

Joliette Service, declared by our customers to be unrivalled, is based upon the following factors :—

An adequate capacity to fill a constantly expanding volume of orders.

Perfect mechanical equipment.

Technical specialists who possess qualifications of the highest order for determining the composition of High-Grade Steel Castings.

Well-organized system of production under the supervision of men whose ideas are modern down to the smallest detail.

A staff of expert workmen in every department of the foundry.

A business-office organization thoroughly impregnated with the ideas of our general management that no effort must be spared that will contribute to the pleasant relations subsisting between ourselves and our customers.

Inquiries Invited from Any Buyer of Steel Castings Looking for Super-Service

Joliette Steel Company, Limited

Head Office and Works :

JOLIETTE, QUEBEC

Main Sales Office - 903 Read Bldg., Montreal

Branch Sales Office, 407 Lumsden Bldg., Toronto

"Every Casting Clean and Uniform"

This is the reason our customers are sending us repeat orders on high-grade

GREY IRON CASTINGS
CORED OR SOLID

PLATING AND FINISHING OF CAST IRON FIXTURE PARTS AND ELECTRO GALVANIZING

We use no scrap when melting our iron, and we are more than commonly careful to see that everything conduces to flawless material and workmanship. A trial order from you will demonstrate the superiority of our service.

YOUR ENQUIRY IS SOLICITED
WRITE OUR SALES OFFICE

Electrical Fittings & Foundry, Limited
Sales Office: 331 King St. W., Toronto, Canada
Works: PRESTON, CANADA

MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ∴ ONTARIO

Lymburner Limited
MANUFACTURERS

METAL SPECIALTIES

BRASS AND BRONZE WORK

ARCHITECTURAL METAL

SPECIAL MACHINERY

TOOLS AND GAUGES

OUR ENLARGED FACILITIES ENABLE US TO GIVE YOU EXCEPTIONAL SERVICE.

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STEEL CASTINGS

We solicit your enquiry for anything in Steel Castings weighing up to 100,000 lbs.

Manganese, Vanadium, Chrome Titanium, Nickel, Etc.

Our capacity is enormous and our equipment unexcelled for the production of Steel Castings for every purpose, such as

Hydraulic, Mill Gear, Car, Locomotive, Marine, Etc.

Your enquiry will receive immediate and careful attention

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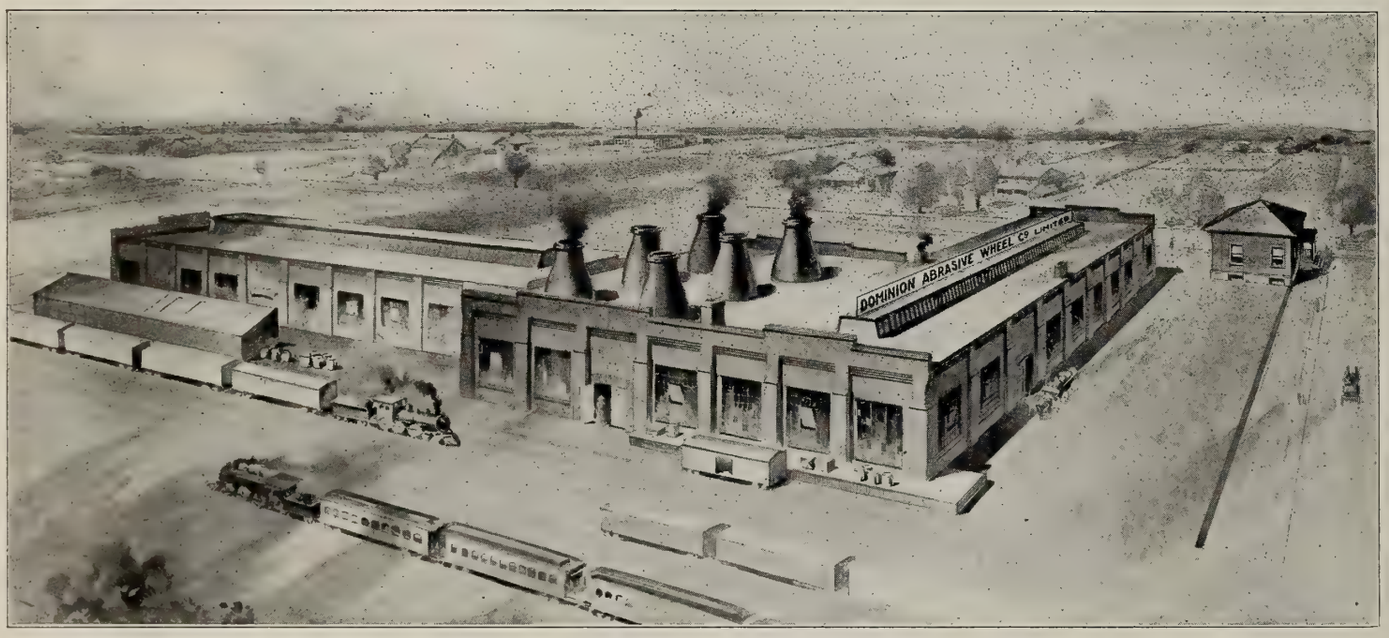
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Our New Plant, Mimico, Ont.

EXOLITE

for general grinding, tool room and precision work.

CARBOLOX

for chilled metals, brass, bronze, and metals of low tensile strength.

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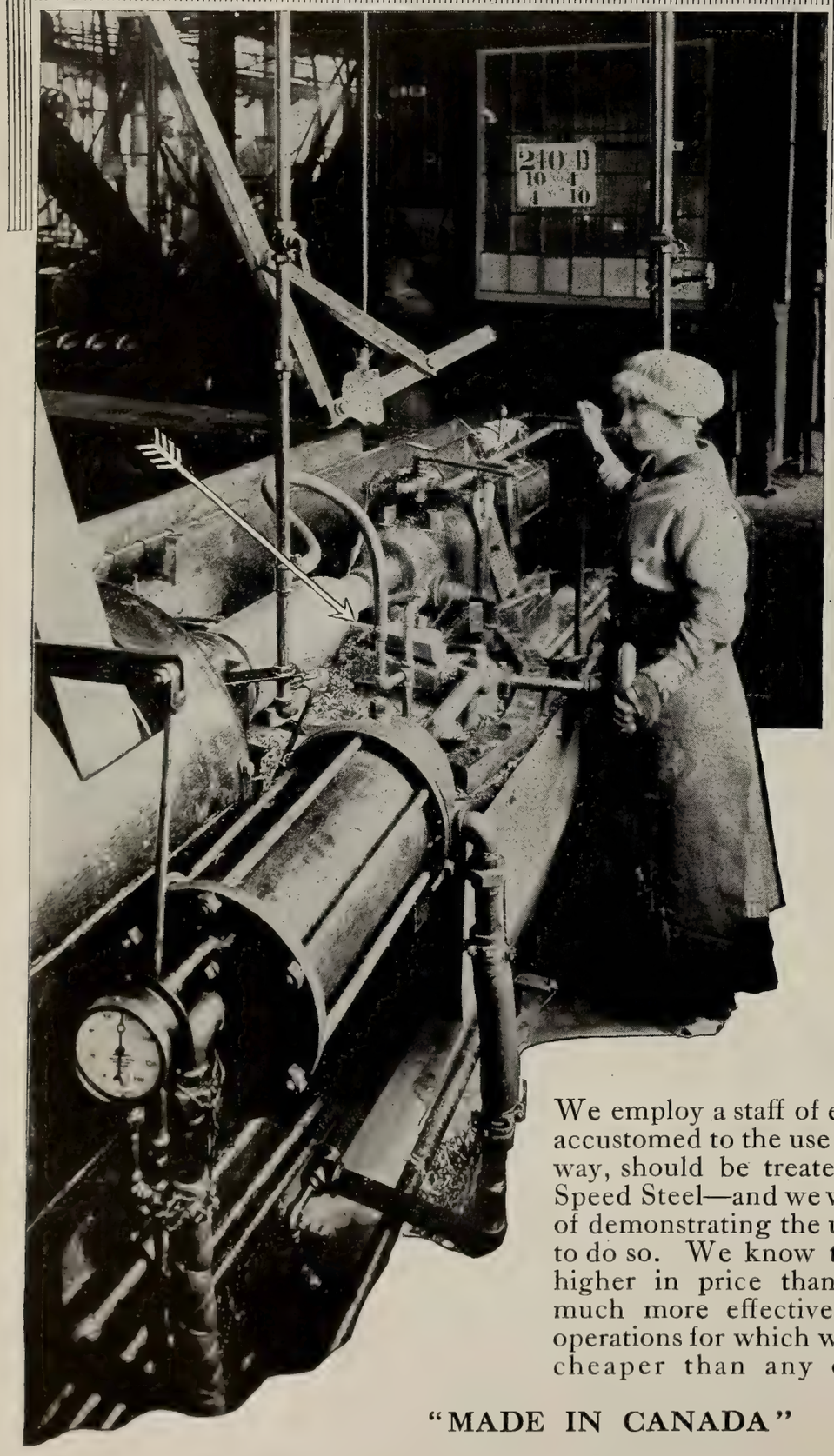
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STELLITE is an alloy of rare metals, containing no iron; so hard that it is being successfully used everywhere in Canada in cutting cast iron and all qualities of steel, including Nickel, Vanadium and other Alloy Steels.

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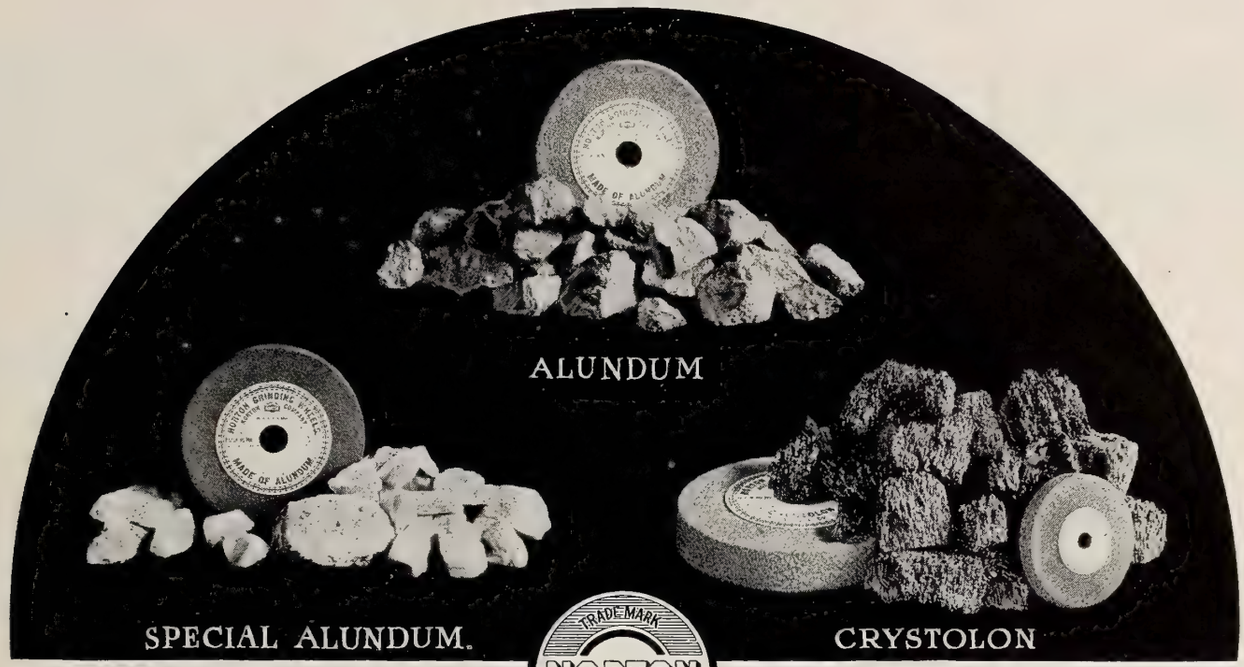
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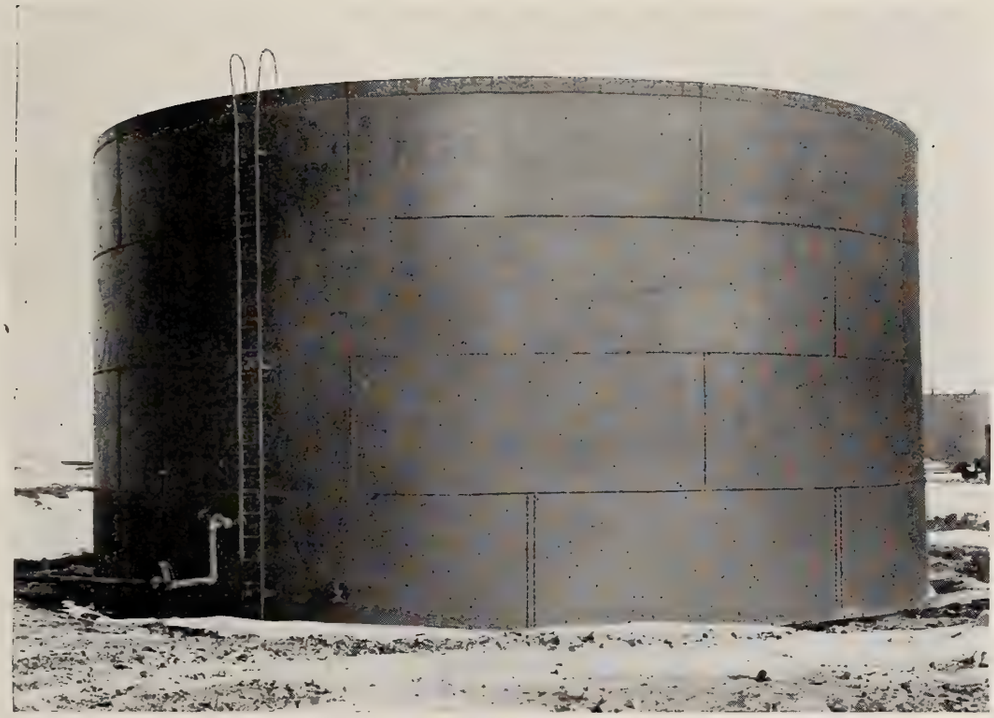
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FOR EVERY PURPOSE

Built to Stand the Wear and Tear



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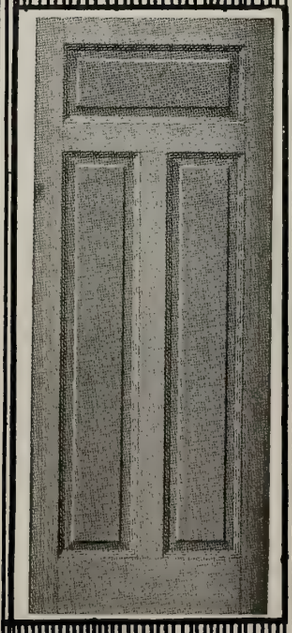
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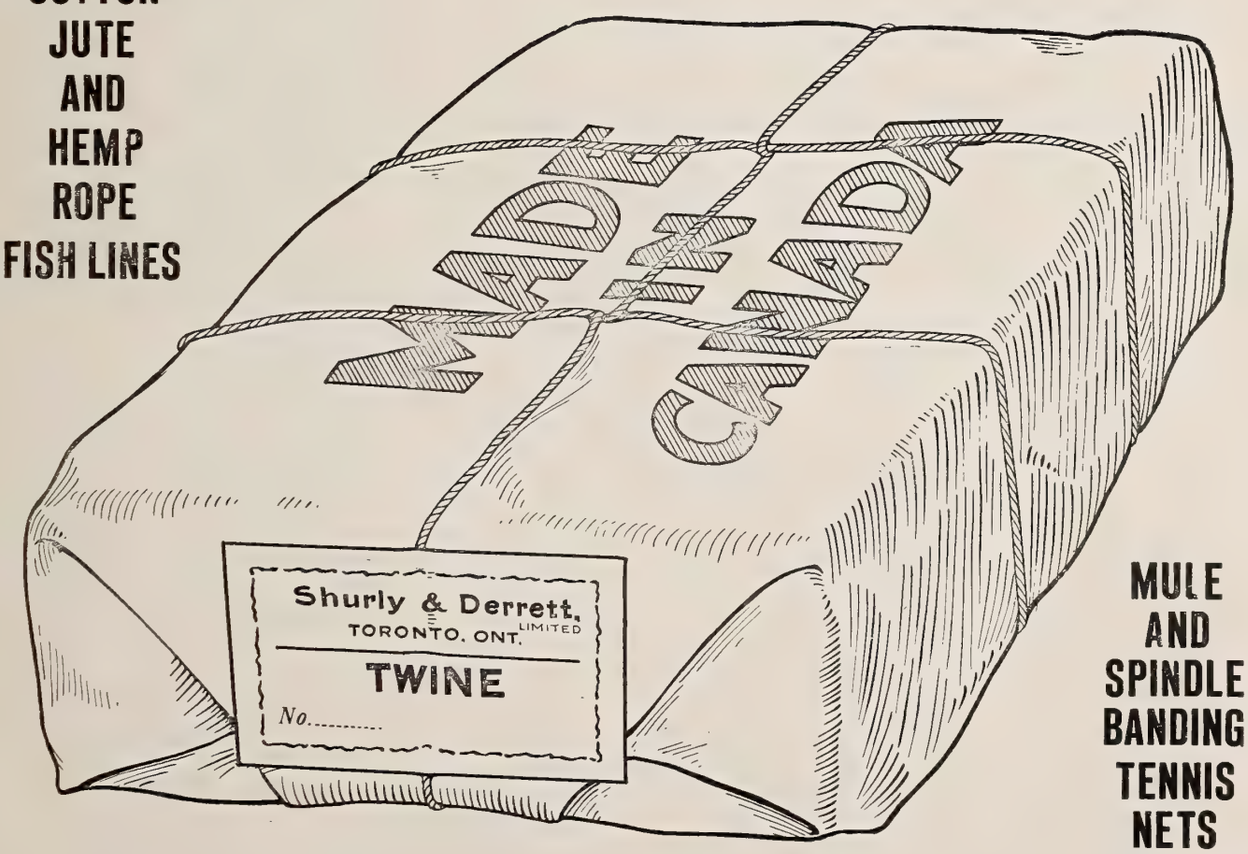
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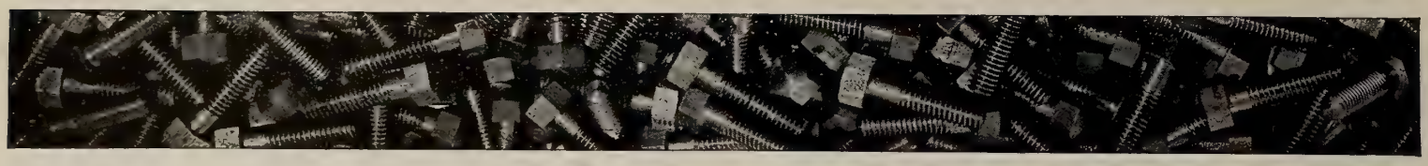
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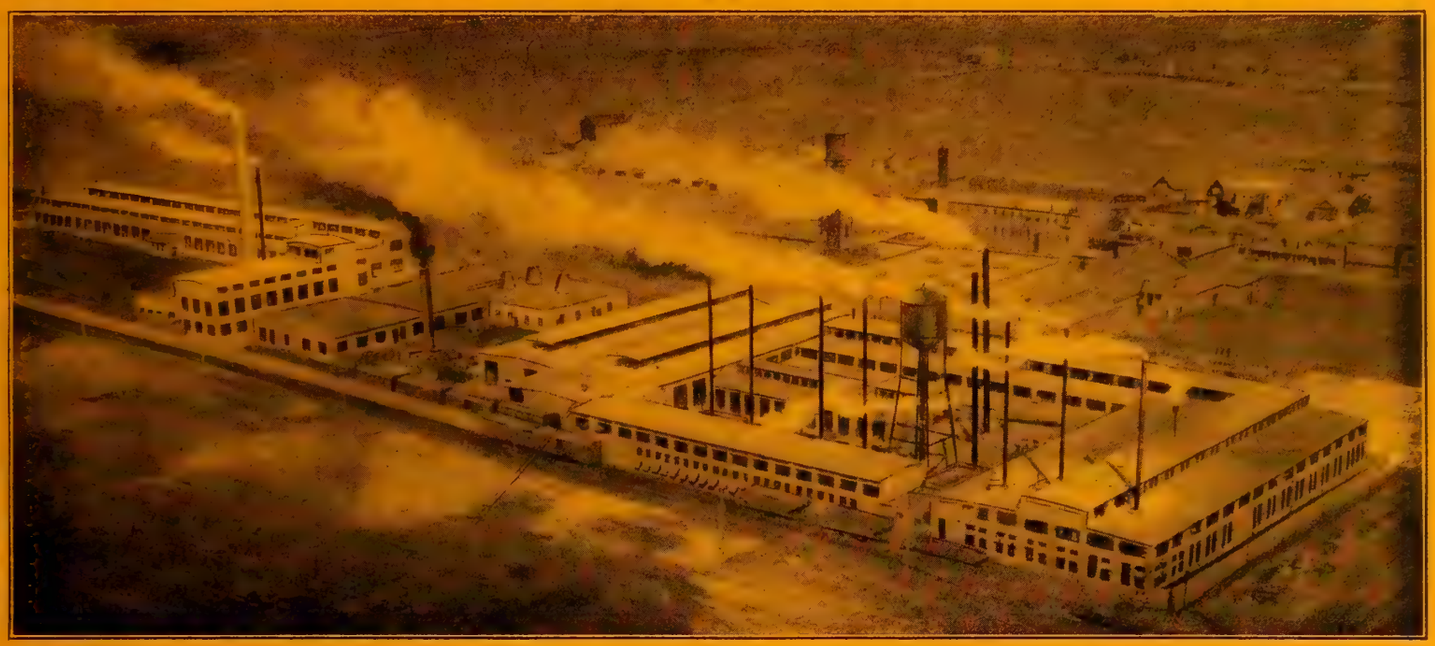
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Our combined output will reach
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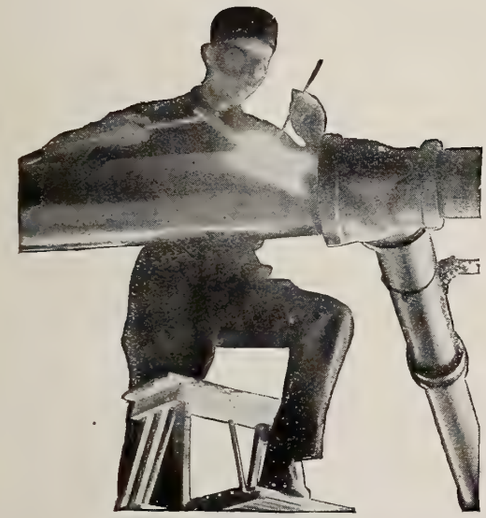
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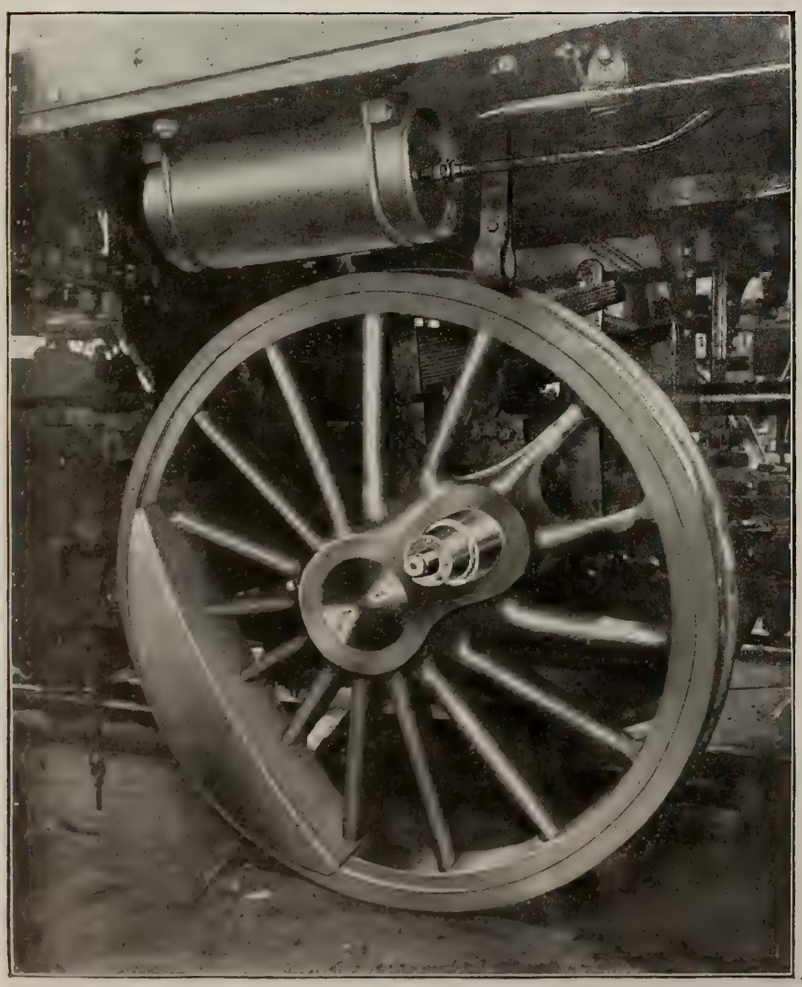
We make a first grade only

Where pure ACETYLENE is required you must have first grade CARBIDE.

The best costs you no more and gives you better results.

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Canada Carbide Company, Limited
MONTREAL - CANADA



This Locomotive Wheel
WAS RECLAIMED BY
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And is proof of the efficiency of this process for reclaiming broken parts of machinery, heavy castings, etc., at a fraction of the cost of replacements and with least delay.

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It simplifies many manufacturing processes, reduces cost of production and SAVES MONEY.

The Cost of an Outfit is Small

The first two or three jobs often pays its total cost.

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An Aggregate of Ninety-Six Years of Service from One Belt

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The big belt in the circle started work in 1878 and after being on the job for thirty-six years it was replaced by a new one. The other five belts were rebuilt from the original and each is good for a minimum of 12 more years of service—an aggregate of 60 years! Making the total aggregate of ninety-six years of service!!

Remember, this could only be done with a Leather Belt.

"Leather, like gold, has no substitute"

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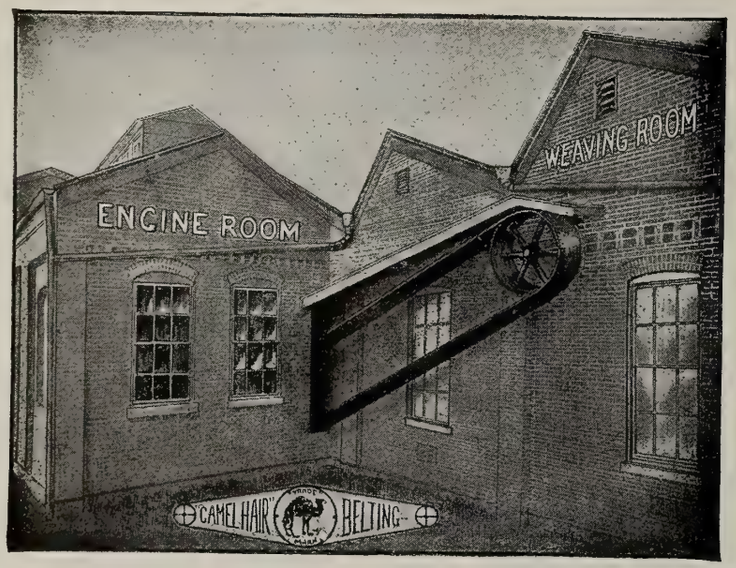
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THIS REDDAWAY

"CAMEL HAIR" "CAMEL" BRAND TRADE MARK REG. BELTING

Stock 1 in. to 24 in. wide



We also manufacture
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Has been running TWENTY-SEVEN YEARS.
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The loss of speed and power by slip and creep is, for any given load, TWICE as much with leather belts as with "Camel" Belts.

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REEDS AND
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ABSOLUTE SATISFACTION GUARANTEED

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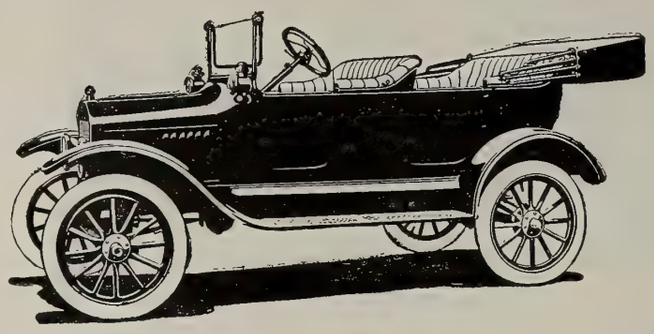
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The choice of the motor buying public of Canada. It answers the needs of salesmen, collectors, business men and pleasure seekers. The Ford gives maximum service at minimum cost.



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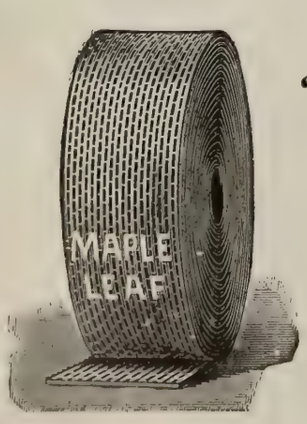
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FORD - ONTARIO

"THE MAPLE LEAF" FOR EVER

Economy, Durability, Efficiency and True Running

We are the sole manufacturers of the celebrated



"Maple Leaf" Brand Stitched Cotton Duck Belting

"Maple Leaf" Belt Dressing



The best on the market for Transmission of Power, Conveying, etc. Also "Maple Leaf" Belt Dressing, which is unexcelled, and equally good for using on all kinds of belting.

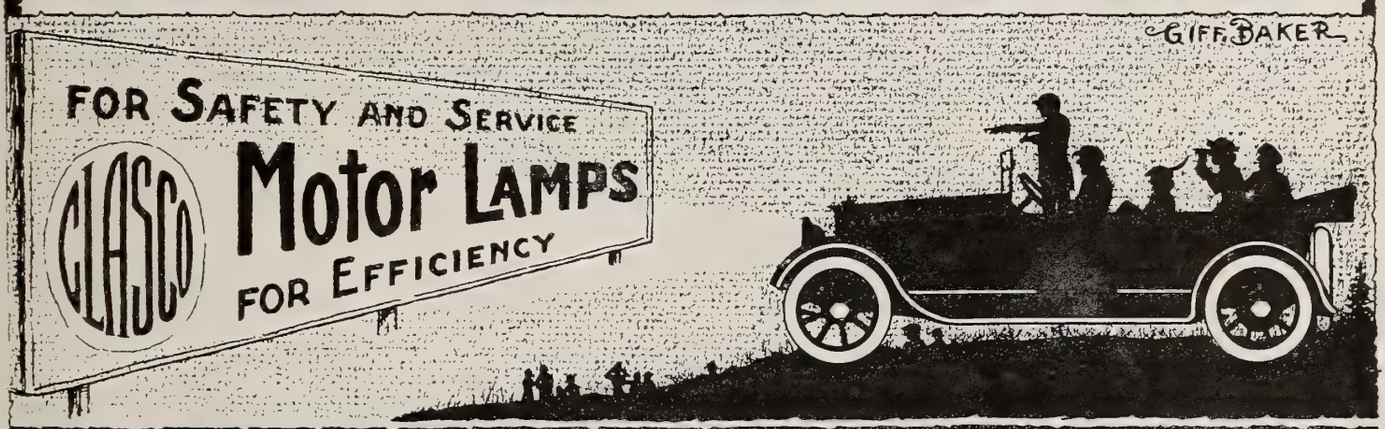
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DOMINION BELTING CO., LIMITED

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Supremacy

¶ The one sure way to ***Win*** and Maintain Supremacy in the production and marketing of any given commodity is to build that article Honestly—and sell it in the same manner.

¶ ***Clasco*** Motor Lamps are honestly built and are honestly sold.

¶ Because of this, ***Clasco*** Motor Lamps are supreme throughout the entire Dominion—and more of them travel our highways than all other makes combined.

—so we repeat,

"When it comes to producing automobile lamp equipment WE LEAD."

Canadian Lamp & Stamping Co., Ltd.

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MOTOR CARS

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Dealers in all principal cities.
Branches—Montreal, Que.; Regina, Sask.; Winnipeg, Man.

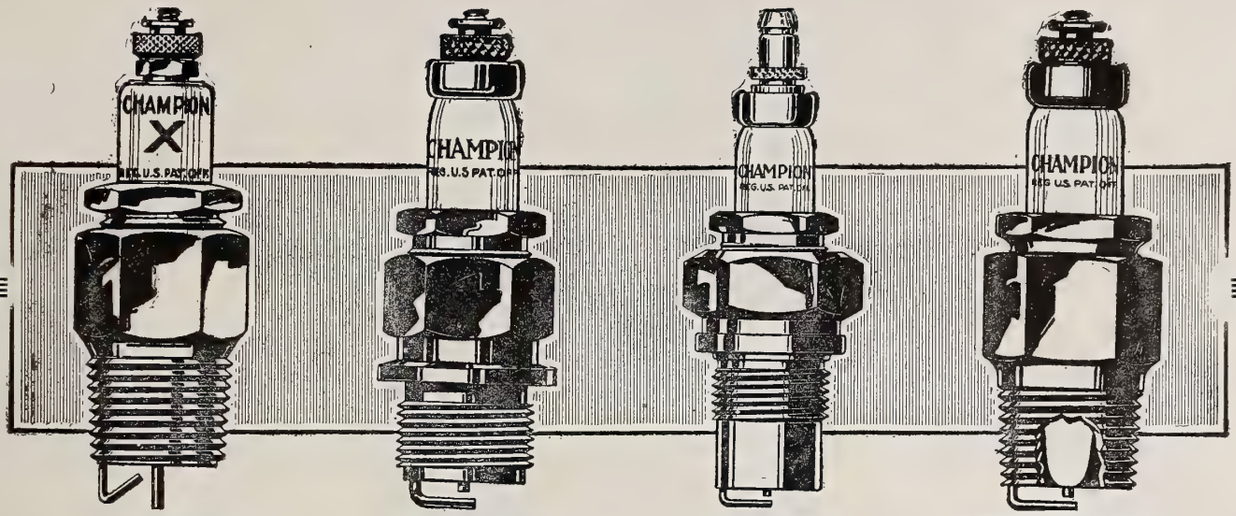
"PERFECT" "MASSEY" "RED BIRD" "CLEVELAND" and other

C.C.M. Bicycles are made right here in Canada

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An inexpensive shelter like this will accommodate many bicycles. Cycling helps employees to be punctual. And the fresh-air exercise brings a glow of health that makes work a pleasure.



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Guaranteed Spark Plugs For Every Gasoline Engine

No matter what make of car or engine you own there is a type of Champion Spark Plug that has been specially developed for your motor under the most exacting service conditions, that a plus efficiency may be assured for every emergency.

Champion Toledo

Dependable Spark Plugs

are equipment on all new Ford, Maxwell, Overland, Studebaker and over one hundred other makes of automobiles and engines.

The manufacturers have selected them because exhaustive tests have proved that the Champions designed for their motors give the maximum of efficiency and satisfaction.

When replacing the plugs in your car or engine be guided by the selection of the manufacturer who made it.

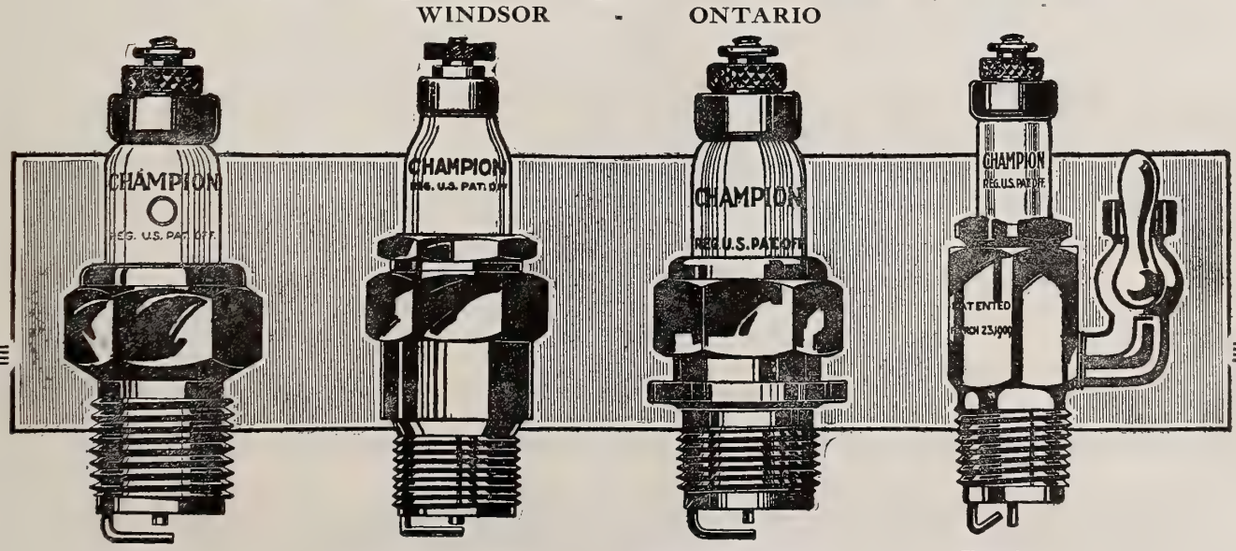
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Be certain that "Champion" is on the porcelain.

The Champion Guarantee — "Complete satisfaction to the user—Free Repair—Replacement or Money back."

Champion Spark Plug Co. of Canada, Limited

WINDSOR - ONTARIO



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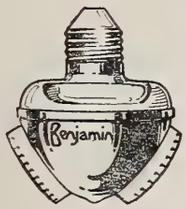
Benjamin Electric Mfg. Co. of Canada, Ltd., TORONTO ONTARIO

"Ideas have fashioned the world"

Administrative genius—ideas in government—have shaped the destinies of people as nations.

Inventive genius—ideas in production—have supplied the comforts and conveniences of people as individuals.

The name



Benjamin

is synonymous with many remarkable ideas wrought into useful electrical devices—ideas which have brought increased convenience and pleasure to millions of users of electricity—and the Service that the Benjamin Institution is able to render is of practical value to the electrical industry.

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- Plug Clusters
- Sockets
- Wiring Devices
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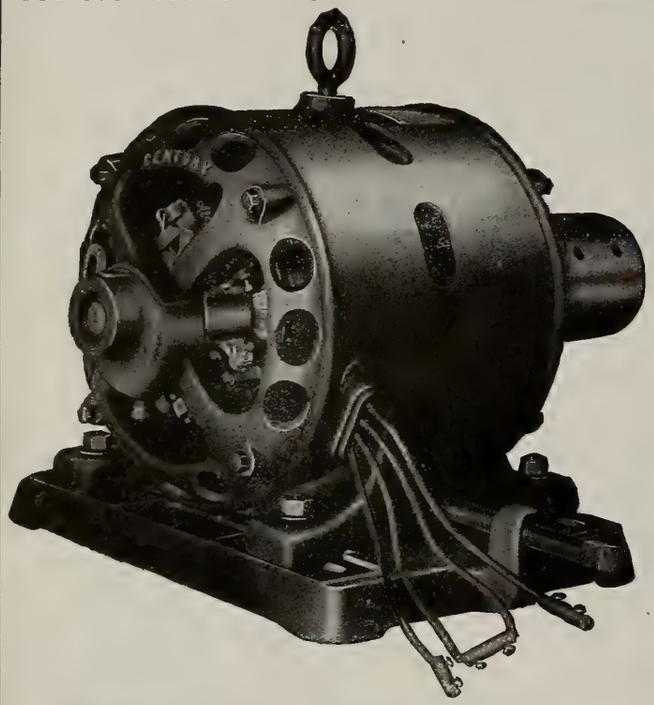
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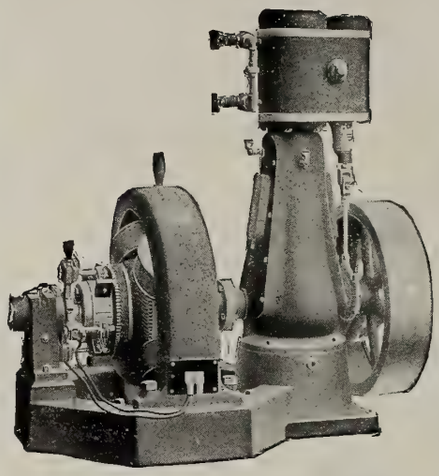


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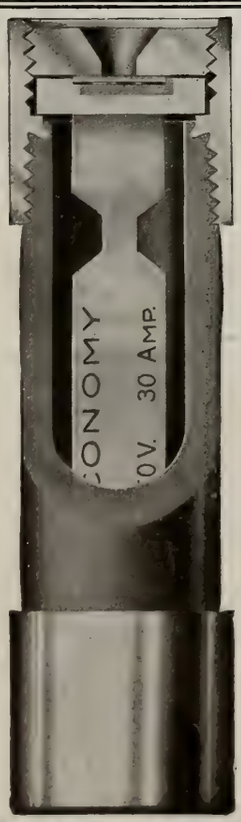
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It Means an 80% Saving on Fuse Costs

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Thus Economy Fuse users (large and small) cut annual fuse maintenance expense 80% besides obtaining positive protection.

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Northern Electric paper insulated lead covered Power cables are designed, manufactured and tested to maintain the highest possible factor of safety.

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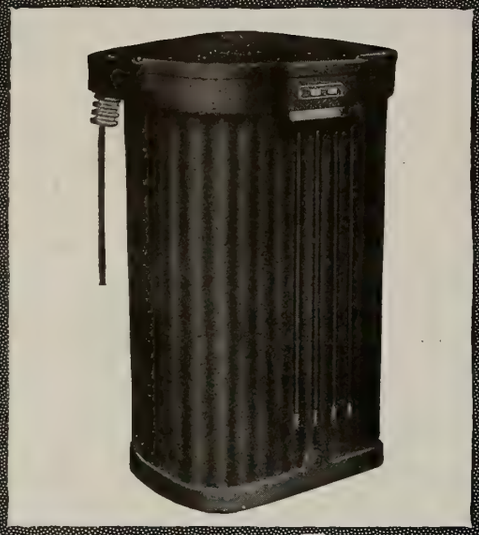
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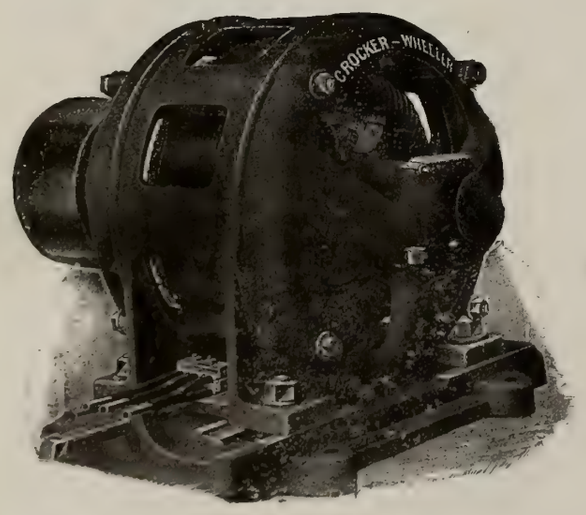
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To secure prices give us K. W. capacity, voltage, cycles, transformers required.

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INCLUDES:

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Excellent Efficiency

They have many other desirable features; Bulletin 155 describes them.

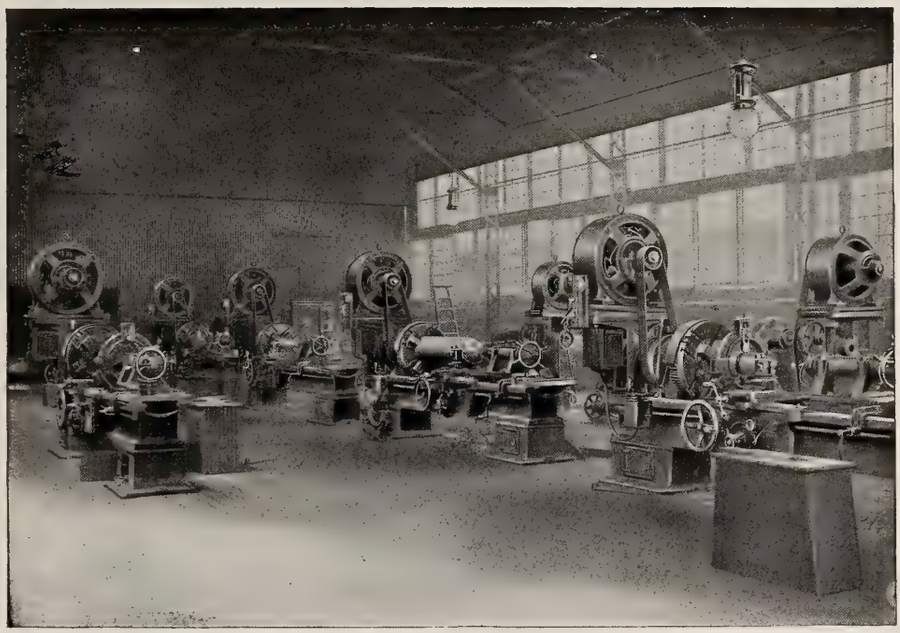
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Type S A Adjustable-Speed Motors



Westinghouse Type S A Adjustable-Speed Motors Driving Planers in Munitions Plant

Why Pay for Power That Doesn't Produce ?

That's what you do when you drive your machines by line shafting and belts. The power right at the cutting tool is the power that produces. The power used to drive line shafting and belts is lost power—and lost power means lost dollars. You pay for only the power that yields returns by driving your tools, individually, with Westinghouse Type SA Motors.

But this is only one of many advantages: Shops are lighter, cleaner, safer. Individual drive permits better routing of materials. The speed control simplifies the work of the operator.

These features are a positive assurance of lowered manufacturing costs, while increasing output in volume and in quality.

Canadian Westinghouse Co., Limited, Hamilton, Ont.

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Barrett Specification Roofs

Made in Canada

Investigate Roofing Claims!

GRAVEL-and-slag roofs laid along the lines of The Barrett Specification cover many of the first-class buildings of the Dominion, because the experience of more than sixty years has proved that—

1st—They last longer than any other kind.
2d—There is no painting, coating or similar maintenance cost.
3d—Their unit cost per year of service is lower than any other.
4th—They take the base rate of fire insurance.

Claims regarding roofing should be met with this question: "How many can you refer to who have used, say, 500 squares of your roofing on a comparatively flat surface for ten years and bought more?"

Then investigate such claims!

We can supply scores of names for this purpose.

Exaggerated statements sometimes sell roofing, because the principles of Barrett Specification Roofs are not well known to the purchaser. Once he understands the long service they give and the low unit cost, he will have no other kind.

Copies of the Barrett 20-Year Specification, with roofing diagrams, sent free on request.

Our 20-Year Guaranty Bond

We are now prepared to give *without charge* a twenty-year Surety Bond Guaranty on every Barrett Specification Roof of fifty squares and over in all towns of 25,000 population and more, and *in smaller places where our Inspection Service is available.*

Our only requirements are that the roofing contractor shall be approved by us, and that The Barrett Specification, dated May 1, 1916, shall be strictly followed.

Further information regarding this Guaranty given prompt attention upon request.

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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION. INCORPORATED.

Vol. XVIII. TORONTO, JULY, 1917 No. 3

INDUSTRIAL CANADA

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War Revenue.

OBVIOUSLY every Canadian manufacturer should bear his proportionate share of the special taxation necessitated by the present national emergency. But manufacturers may rightfully contend that the tax levy be placed as equitably as practicable, and in such manner that industry will not thereby be stunted or jeopardized.

The Government desires to raise a maximum of revenue with a minimum of injury to the industries affected. Unjust or unwise taxation must defeat its own purpose, for it would impose upon the subject of its levy conditions which would lessen rather than increase the revenue-producing capacity of business. Upon industry must rest the obligation of efficient production for the equipment of our forces, enlarged capacity to meet the needs of our Allies, and simultaneously to supply the private needs of the public.

A sound and permanent policy of taxation will permit the manufacturer to calculate for the future. A shifting, inequitable or speculative proposal will handicap the task of production, and make his contribution to the public funds uncertain and inadequate. The manufacturer is, therefore, less concerned in the amounts of the tax, provided they are necessary, within reason, and levied without invidious discrimination, than he is in the recognition and establishment of just and permanent principles of taxation, in the light of which industry may see for the future.

Accordingly, no retroactive tax should be levied upon the distributed income of people, or individuals, or corporations. The retroactive taxation of such subjects is a misnomer. The levy should be paid from the present and the future, not the past. When the Government adopts the policy of levying unanticipated and, therefore, unprovided for burdens upon the expenditures of the past, no business can face the future with certainty, and no individual can be assured that his investments will not be handicapped with unforseeable debts. Let necessary burdens rest where they may be anticipated and provided for. Nothing can more unsettle the enterprise of the future than to threaten the continuous reopening of the foreclosed business of the past.

The business profit tax is predicated upon an arbitrary standard, without reference to either the normal earnings of the subject of the tax or the regard for the varying risk of different forms of business. It is not only condemned by reason and experience, but it tends to establish a false notion in the public mind as to fair returns upon investment, and to provide an erroneous basis for unjustly criticizing the larger returns of more highly efficient and bolder enterprises, which it is the part of a sound social policy to stimulate and assure reward. Besides, the tax inevitably operates to penalize superior efficiency and greater business risk.

The double taxation of income is not in itself unjust, but the arbitrary imposition of double burdens upon income derived from business done in corporate form instead of asking other elements of the community to do their share, invidiously and unjustly discriminates against investment in, and the doing of, corporate business. This must inevitably operate to discourage investment in, and therefore lessen the value of, corporate securities, to increase the difficulty of corporate financing, and to decrease the earnings by disproportionately increasing the tax cost of corporate business.

If a business profit tax must be levied, it should rest upon all forms of business in the light of a definite standard, and not only upon corporations and partnerships in a manner which severely discriminates against

the corporate method of business, in which the savings of thousands of our people are now invested, and which cannot be made the subject of injurious discrimination without incalculable harm to the whole business structure.

It cannot be too strongly urged that the establishment of just and permanent principles of taxation for the period of the war is a wise legislative precaution that will permit every form of business to adjust its structure to the necessities of the situation. Retroactive taxation of distributed income is as unjust as it is uneconomic. No forethought can provide for it, and it must, therefore, operate either as a tax upon capital, or the income of the future, while nominally aimed at the past. Corporate business is entitled to equal treatment with every other form of business. To penalize income derived from corporate operation is to unjustly affect the value of the investments of thousands of stockholders at a time when business done in corporate form is the chief reliance of the nation to secure efficient production and distribution for the equipment and maintenance of our own forces and those of our Allies, and to meet the private needs and conveniences of the public. Industry taxed with wisdom and equity can perform its task with efficiency and confidence, and will provide an unfailing source of increasing national income, but if handicapped by inequitable and invidiously discriminating burdens, it must inevitably fail to produce in accordance with the industrial and pecuniary needs of the emergency.

Imperial Preference.

EVEN in these days so overcharged with great issues, the definite adoption by the Imperial War Conference of the principle of preference is an event of surpassing importance. It is in part the realization of the late Mr. Joseph Chamberlain's dream, but it comes in a way which will command the hearty assent of the whole country, and it is certain the decision will not be reversed. It will involve no burthen on British democracy. It means a system of mutual aid and support between all the Dominions and States of the Ocean Commonwealth. They must stand together in peace as in war—without closer reciprocity with the lands of the Empire overseas, we could not hope to use to the utmost, as we must, every possible means for grappling with the gigantic problem of the war debt, or with the unprecedented tasks with which peace will confront our shipping, our commerce, and our whole economic organization. Preference can be and will be compatible with measures of definite advantage for our allies. The closer union and better organization of the British dominions will serve the progress of the world.

In the nature of the case it has been to the Imperial Cabinet, and not to the Conference, that the discussion of the most pressing problems has fallen. The latter body has been concerned rather with future developments than present needs. Wide questions of the greatest importance have come within their survey, and the Colonial Secretary very properly remarks, as being worthy of note, that in every case the decision of the Conference was unanimous; on no occasion was it found necessary to take a division or to withdraw a motion because agreement could not be reached.

The experience of the war has also convinced the Conference that the safety of the Empire and the necessary development of its component parts require prompt and attentive consideration, as well as concerted action, with regard to (1) the production of an adequate food supply and arrangements for its transportation when and where required under any conditions that may reasonably be anticipated; (2) the control of national resources available within the Empire for necessary national purposes, whether in peace or war; and (3) the economical utilization of such national resources through processes of manufacture carried on within the Empire.

Mr. Slice o' Bread.

WITH commendable zeal, the Ontario Safety League has been taking up the question of food conservation. They point out that conservation of food and resources is linked up with conservation of human life to such an extent that they feel it to be within their field to conduct a campaign with this object in view. In this connection they have recently re-printed and circulated, as a bulletin, a pamphlet issued by the Food Controller of Great Britain. This bulletin carries the arresting title, "Mr. Slice o' Bread," and runs as follows:—

"I am a Slice of Bread.

"I measure three inches by two-and-a-half, and my thickness is half-an-inch.

"My weight is exactly an ounce.

"I am wasted once a day by 48,000,000 people of Britain.

"I am 'the bit left over'; the slice eaten absent-mindedly when really I wasn't needed; I am the waste crust.

"If you collected me and my companions for a whole week you would find that we amounted to 9,380 tons of good bread—WASTED!

"Two Shiploads of Good Bread!

"Almost as much—striking an average—as twenty German submarines could sink—even if they had good luck.

"When you throw me away or waste me you are adding twenty submarines to the German navy."

French Business.

THE following statements, pointing out why Canadians are not getting French business, are contained in a letter recently received by the Department of Trade and Commerce from Mr. Philippe Roy, Canadian Commissioner General, Paris. They will merit the attention of Canadian business men:—

"Since the beginning of the war, the methods employed by Canadian firms to get French business have not been successful in the great majority of cases, any more than the efforts of American firms have been successful, when they have failed to realize the one possible basis upon which business can be made successful.

"There are a few American firms doing a large business in France, which spent more than a year and a half on the spot to find out how to do business, and these people have put into play an organization under which they are able to quote French customers c.i.f. prices and deliver the goods they sell on their own ships, which they control. This is, in my opinion, the only way under present conditions in which business can be carried on here successfully on any kind of scale, outside of the large railways and the Government and a few big industrial corporations, and even in the case of the latter, at least during hostilities, the question of transportation and exchange must be considered and solved by the exporters if they wish to have some share of success in competition with the United States. I am convinced that it is because the Hudson Bay Company has been able to give satisfaction to the French Government on these two points that it was able to place important orders in Canada.

"The French business man wants to pay for what he buys in France and in francs. The Americans were keen to realize this and the establishment of American banking interests over here to meet this situation has been one of the strongest factors in developing United States business.

"There is a big field here for the establishment of Canadian banking interests and this, in my opinion, would be a strong move towards the development of Canadian business, but as long as the present transportation situation exists, Canadian exporters will not develop continuous business with France until they get together and mobilize their industrial, financial and transportation facilities, so that they may sell on o c.i.f. basis and accept in payment for what they sell in France francs at the current rate of exchange.

"To ask a Frenchman to buy and pay for his goods in America or Canada in dollars is like squeezing the blood from his very heart. Up to now I must state that I did not notice on the part of our Canadian exporters the least effort made in this direction.

"On an equal basis Canadians would have a great chance to develop business in France if they would understand how to go about it. The feeling in this country towards Canada is excellent. The French market should readily absorb some of our products, such as agricultural machinery, wood-pulp and our forest products.

"Up to the present time our Canadian exporters have not been in a position to fulfil the conditions above mentioned in placing these products in accordance with the demand on the French market."

The Excess Profits Tax.

CRITICAL comment on the incidence of an excess profits tax is made by the *Chamber of Commerce Journal* of London, England. The views of this organ of British opinion will doubtless have an interest for Canadians who have been considering the same situation.

"It is a truism to say," says the journal, "that every tax must be to some extent unequal in its incidence and therefore unfair, but it is difficult to imagine an impost which exhibits inequality to such a remarkable degree as the excess profits duty. It will always remain one of the curiosities of the war. For, while on the one hand, the tax is indefensible in principle and only justifiable as an *exigence* of the times—both the present and the late Chancellor agree as to this—on the other hand, one cannot but admire its fundamental basis which is that only the man in receipt of a larger income than in pre-war times must pay. It is clever and it is cute, for the scheme necessarily appeals to the public. You only rob the hen-roost of the surplus eggs; you leave the normal clutch. But its effects are extraordinary, are anomalous to the last degree, and are, in many senses, dangerous. It weakens the power of British commerce to compete after the war; it stifles enterprise; it tends towards extravagance in management; it throttles the business man whose profits are dependent not so much on the amount of his capital as upon his individual astuteness, energy and resource; in fine, it acts as a drag upon development both now and after the war, and the country that does not develop does the reverse. Still, the principle—if such it can be called—has come to stay for the duration of the war at least, and it is a sign of the patriotism of the commercial community that no hint of opposition has been heard since the duty took its place on the Statute Book. But to accept this relic of the methods of King John is one thing; to endeavor to bring it more into line with modern ideas of justice and commonsense is another.

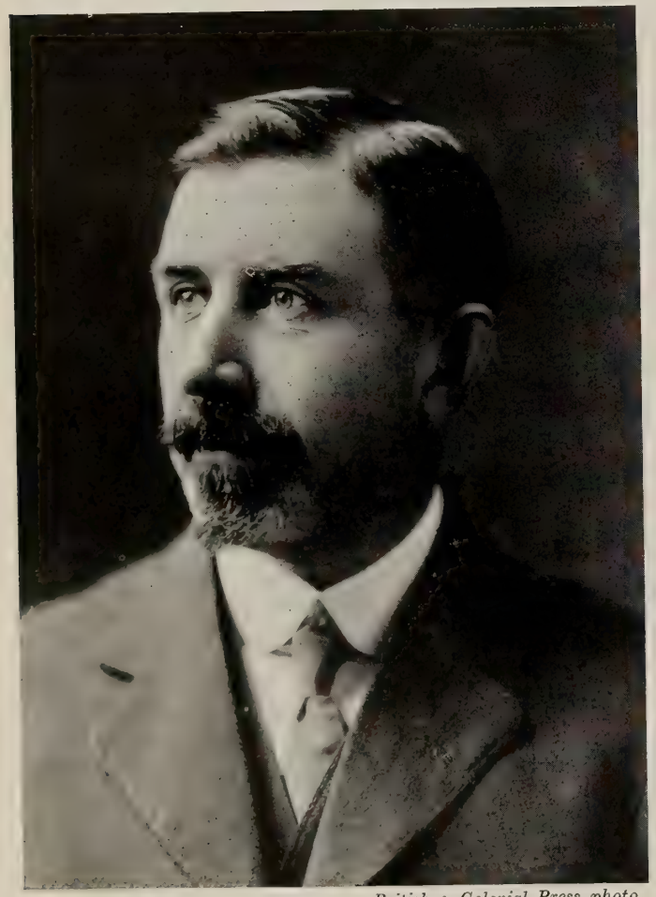
"The London Chamber of Commerce has recently placed before Mr. Bonar Law, by deputation, a number of suggestions with this object in view—with what success the Budget alone will show. It is impossible to refer to their proposals in detail, but to some of them attention may be drawn. In the first place, the deputation argued that to leave the statutory percentage at 6 per cent. is to shut one's eyes to the present value of money; surely no one can contend that the return on industrial investments should be no higher than the interest received upon gilt-edged securities. Commerce and industry could not exist in such conditions, for who would risk money in commerce and industry when the same income could be assured merely by placing one's funds in Government loans devoid of risk? To say that to raise the statutory percentage would lower the value of money all round amounts merely to failure to appreciate that the war has inevitably had that effect already. Six per cent. may still be 6 per cent., but its purchasing power has been proportionately lowered.

"The outlook, however, in this connection can hardly be called hopeful. The small firms, particularly those started in recent years, are heavily handicapped by the conditions, and it has, therefore, been proposed that the £200 allowance should be increased. The point is so obvious, that some relief must surely be given. The deputation argued, on the general grounds indicated above, that the present rate of duty is too heavy, and suggested that anything beyond 50 per cent. should be taken in the form of a loan.

"There are, however, grave objections to this from the point of view of the Exchequer, much as it would suit the commercial community and, therefore, there does not seem to be any likelihood of the proposal being accepted. The extension of the powers of the Board of Referees has fre-

quently been put forward in the press and elsewhere, but the difficulty appears to be that there is a danger of making the Board of Referees the taxing authority.

"The hardship upon those who first pay excess profits duty or war tax in another part of the Empire must surely be dealt with; indeed, if the rate of the duty is increased—and there is a very persistent rumour to that effect—we might otherwise find cases where over 90 per cent. would be paid by the double tax, for there is clearly a tendency to increase the rate in the Dominions. In the Australian



—*British & Colonial Press photo.*

W. J. Bulman
Bulman Bros., Limited, Winnipeg
First Vice-President, 1917-18, Canadian Manufacturers Association

Budget, which was suspended owing to the political crisis there, the figure had been put at 75 per cent. The deputation also emphasized the unfairness of retrospective taxation, the desirability of more generous allowances for wasting assets, and the injustice of controlled firms having to pay under whichever of two Acts of Parliament yields the greater return to the Treasury. Of further points one alone need be mentioned, namely the anomaly by which commerce and industry have to bear the tax alone. The Excess Profits Committee of the London Chamber of Commerce will, of course, keep their proposals in view and will take such action as may be considered desirable when the Finance Bill is before the House."

Making the Railroads More Efficient.

THE Committee on National Defence of the American Railway Association has been making some wise recommendations looking toward economy in transportation. It suggests the following, which are quite as applicable to Canada as to the United States:

Cutting down repairs on locomotives by 5 per cent., releasing 3,325

Increasing the mileage of locomotives by quick turning at terminals, double crews or pooling.

Closer attention to boiler repairs, enabling the locomotives to carry full steam pressure.

Constant and close inspection of firing methods.

Utilizing the full tractive power of locomotives at 12 to 15 miles an hour. (Locomotive tractive power falls rapidly as speed is increased).

The efficiency of the cars can be increased by:

(a) Quicker terminal handling and prompter loading and unloading.

(b) Better loading—more tons per car.

From statistics lately collected, the average time consumed by shipper and consignee averages a little under two days each—a total of about four days per trip of a freight car for both loading and unloading. Under the old $1 straight demurrage rule the average detention, including free time, of a freight car when in the hands of a shipper or consignee, was 1.73 days. In California, under the $3 demurrage rate, it is about .97 days, or approximately one-half.

The average miles run per freight car per day is 25. By increasing this to about 30 miles, or 20 per cent., is equivalent to adding 515,000 freight cars, or 20 per cent., to existing equipment.

Increased carloads, which have not kept pace with increase of car capacity, notably in the case of box cars, as shown below:

	Tons.
Average capacity of all cars	39.7
Average load per car, all cars, revenue freight	15.5
Average load per car, all cars (including company freight)	17.0
	P.C.
Per cent of capacity utilized	43.0

Shippers and consignees are urged not to ship beyond their ability to promptly handle.

Railroad officials are advised to point out the importance to shippers of extending private siding to correspond with their increased traffic and in improving their facilities to avoid car delay, and where possible, to arrange their shipments so as to be made uniformly and at periods of the year when cars are least needed to move crops.

Load all cars to 10 per cent. in excess of their marked weight capacity. An increase of two tons per loaded car would be equivalent to adding over 200,000 cars to the number available for public use.

THE NEW PRESIDENT OF THE ASSOCIATION

By WILLIAM LEWIS EDMONDS

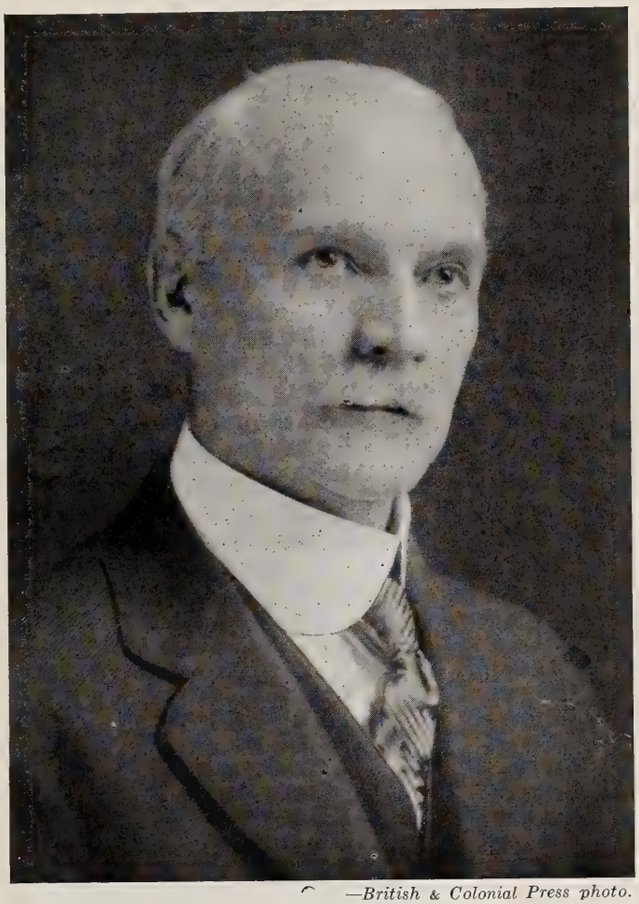
IT was a rather pleasing coincidence that Mr. S. R. Parsons, the new President of the C.M.A., should have been elected to that important office at a convention held in Winnipeg, for it was in that city that he began his business career away back in the early "eighties." He had gone there from Port Hope, his native town, when a young man, and had finally embarked in the wholesale paper and stationery business under the style of Parsons, Bell & Co., which connection he maintained until about twelve years ago, when, realizing that the climate was no longer agreeable to his constitution, he removed with his family to Toronto.

Shortly after Mr. Parsons' arrival in Toronto he became associated with his present enterprise, the British American Oil Company, Limited, which was at that time being organized. His original office with the company was that of vice-president, but only a brief period elapsed before he became president, which position he still occupies.

There are two particular types of business managers. One is of the type that binds down with red tape all employees, whether they be heads of departments, salesmen or juniors. The other is of the type that selects good men and gives them the measure of responsibility that their respective positions warrant, and then commands them to go ahead and make good.

Mr. Parsons is of the latter type. Whether it be from intuition or experience, I know not. Most likely it is a combination of the two. But whatever source its origin might have been, he knows both how to select men and how much rope to give them. And there is another thing he knows how to do to a turn—he knows how to remunerate men according to their worth. From this policy of its president the British American Oil Company gets a two-fold crop of results. In the first place it secures high-class men and holds them. And in the second place it gets from these men a high degree of enthusiasm which manifests itself on all occasions, and particularly at the monthly conferences which are regularly held in the office of the president, where ways and means of promoting the interests of the company are freely discussed and suggestions courted.

The origin of Mr. Parson's active interest in the Canadian Manufacturers Association was the valuable assistance which his company obtained from the Transportation Department. On account of the nature of its business, transportation is an all-important matter with the British American Oil Company. Using the steam railways as extensively as it does, a slipping of a cog here and there often means serious consequences to business. After the Transportation Department had readjusted these "slipped cogs" a few times it began to dawn upon Mr. Parsons that an organization which did so much for his company was entitled to a degree of personal service from him. He accordingly became an active and not a passive member. His knowledge of transportation matters naturally led to his being included in the Transportation Committee. Six years ago he became its chairman, and he filled the position with such ability that at the close of the first year the Nominating Committee insisted that he fill the office for a second term. Before the committee would consent to releasing him from the onerous duties appertaining to the chairmanship a period of four years had elapsed. Then the nominating committee became a little more magnanimous and decided to place him in line for the presidency. It accordingly nominated him for the second vice-presidency. Last year he was moved up to the vice-presidency, and at the recent convention in Winnipeg he was the unanimous choice for the presidency.



—British & Colonial Press photo.

S. R. Parsons
British-American Oil Co., Limited, Toronto
President, 1917-1918, Canadian Manufacturers Association

While Mr. Parsons is strong as a business man, and particularly in the quality of executive ability, that is not the only direction in which his strength lies. He is a strong man all the way round. He is a man of strong opinions, and particularly on subjects that approach the ethical in character. And having cultivated the habit of looking at controversial subjects from the other fellow's perspective as well as his own, it is not a difficult thing to persuade him to change his attitude provided the other fellow is right and he is wrong. But when once, after carefully weighing the pros and cons, he is persuaded that he is right he'll not surrender principles, although where non-essentials are the issue he will readily agree to a compromise. In judgment he is sound, and in insight keen and quick. Although not connected with either political party, Mr. Parsons takes a keen interest in public affairs, and practical movements which have for their object a betterment of conditions in the State and in society have his warm and, in many instances, his active sympathy.

"These are surely days," he said in his speech at the banquet in Winnipeg, "for plain living and high thinking—days when there is a compression of life, and days which summon all that is heroic within us, to stand like men in meeting our duties, whether they be personal, social, local or national."

That the C.M.A., under the presidency of Mr. Parsons, will continue to exercise a potent influence, both in the interest of the manufacturers and of the State, there can be no doubt. He is a worthy successor to a long line of worthy men.

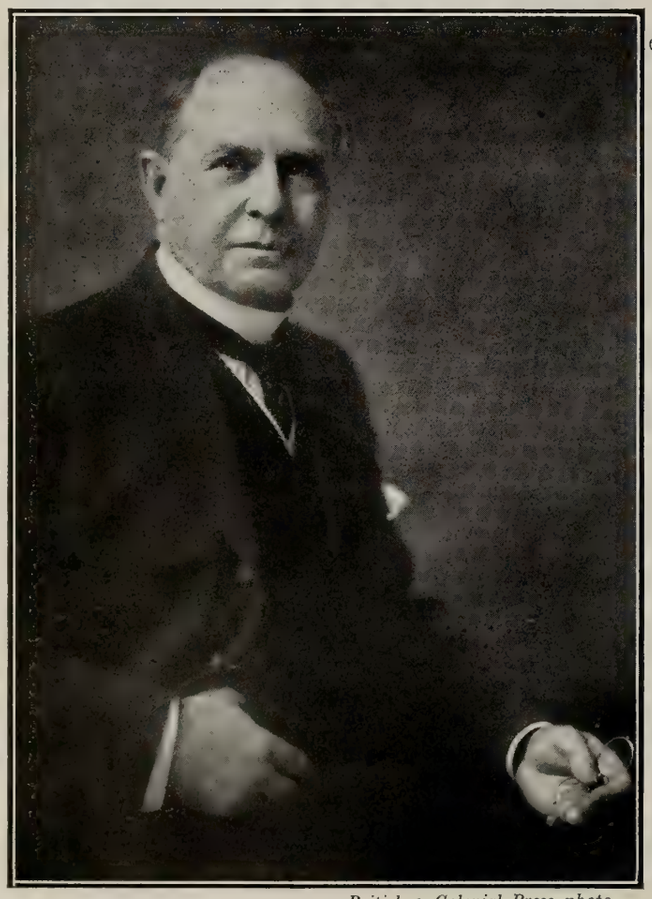
CANADA'S INDUSTRIAL PROBLEMS

By LT.-COL. THOMAS CANTLEY

The Annual Presidential Address Delivered to the Members of the Canadian Manufacturers Association at the Winnipeg Convention

IT is my privilege as your President to bid you all a hearty welcome to this meeting, which marks the conclusion of our forty-sixth year as an association of Canadian manufacturers. I welcome you with pleasure, feeling confident that you will be gratified with the evidence of progress that will be laid before you in the course of the meeting, but more especially because I look upon the attendance here to-day of so many busy men of affairs, gathered together from afar in these troublous times, as an earnest that you are all actuated by one common purpose—a desire to accomplish something that will be worth while. I trust that our conference will be approached in that spirit, with a determination to be fair in our views and judgment and unselfish in our demands. Let us not now forget that a nation at war should be a united nation, and that we can naturally contribute to national unity by moderation in our demands and toleration in our judgment.

It is a matter of no little satisfaction that we are able to meet amid such pleasant surroundings, and that we are to enjoy the hospitality of a city so justly celebrated for the cordiality of its welcome. May it prove a source of inspiration that we meet within the chief city of the fertile plains, upon which the eyes of an anxious Empire are focused in the earnest hope that the wide fields of Western Canada will yield a bountiful harvest. It may well be that the great struggle in which we are engaged will yet in large measure be won on the fertile prairie, to which this City of Winnipeg is the gateway, and that the rattle of their far-flung battery of binders will be to some ears as music in which can be detected the first faint notes of the peals of victory. I consider it was a happy choice that led to the selection of Winnipeg as the scene for this gathering. The magnificent efforts that these western provinces have and are now putting forth to sustain the cause of world freedom should strengthen each of us in our determination to make ourselves similarly useful.



—British & Colonial Press photo.

Lieut.-Col. Thomas Cantley
Retiring President, Canadian Manufacturers Association

Eleven years have passed since it was last the good fortune of the Association to meet in Winnipeg—eleven years of great change and progress. In that period this city itself has practically doubled in population and become possessed of public buildings and business blocks of which many an older and larger city might well be proud. Not the least important of these is the handsome structure in which we are housed—a structure of whose merits I am sure you will be doubly appreciative when I recall that it was built and furnished as far as possible with material of Canadian production. During nearly the whole of that period this Western country has benefitted from a steady inflow of settlers and an immense new acreage has been brought under cultivation. Within that period two transcontinental railway systems, with Winnipeg as their western headquarters, have been carried through to completion, and the map has been dotted with scores of prosperous towns and villages where before there was only the open prairie.

From a manufacturing standpoint, the development of these western provinces has fully kept pace with their development in other directions. With characteristic enterprise, their citizens have freely utilized the resources at hand to make themselves as independent as possible of outside sources of supply. In milling, in their preparation of animal products and in similar forms of production, there is no reason why the West should not greatly excel. In the heavier lines of manufacture, her growth has been retarded by the high price of coal and power, but this difficulty, I am informed, is already partially overcome by the development of hydro-electrical energy, with a good prospect that further, if not complete relief, may now shortly be had through the utilization of the vast deposits of lignite with which the West abounds.

It was from a due appreciation of the progress in manufacturing that these western provinces have made, and will doubtless continue to make, that our Council decided about a year ago to constitute here a branch of the Association, and to provide that branch with the services of a competent secretary and suitable office accommodation. It is a striking tribute to the enterprise of the central committee in Winnipeg and to the public-spiritedness of western manufacturers in general, that within the year no less than two hundred new members have been enrolled from this territory. You will, I am quite sure, all join with me in congratulating the Prairie Provinces Branch on the splendid progress it has made, and in offering it our best wishes for a career of continued expansion and usefulness. The time will soon come, if indeed

it has not already come, when through this Branch the Canadian Manufacturers' Association will be recognized as the dominant commercial organization in Western Canada—a position which I hope it will earn and which it can only retain by living up to high ideals of broad public service, and thus securing the confidence and co-operation of similar organizations, representing other interests.

The various problems upon which our Association has been engaged during the past year are fully discussed in the reports that will be laid before you, so that there is no need for me to refer to them, except by way of general commentary. As these reports are presented, it will become increasingly apparent to you that the direction of our activities was frequently beyond our control, in the sense that it was forced by unusual conditions brought about by the war. We have been passing through times of uncertainty and stress, and we must be prepared to face greater uncertainty, and still greater strain before the Empire and our Allies have won Liberty's great victory.

Labor has never been in so great demand in Canada as it is at present, nor never so highly paid. Manufacturing materials of every kind have greatly advanced in value and are still daily becoming increasingly difficult to secure; in some instances the prohibition of their export from other countries has made it necessary for us to have recourse to inferior substitutes. For a considerable portion of our normal products there has ceased to be a demand, so that many manufacturers have had to adapt equipment to the manufacture of new products, and cultivate new markets. The movement of traffic has been attended by exasperating delays. Owing to a shortage of production and the difficulties of transportation, coal has advanced to famine prices, threatening to deprive us of both heat and power. Our expenses have been increased by the necessity of providing liberal compensation for industrial accidents. Our legislatures, meanwhile, have added to the list of Statutes that tend to interfere with—when they should facilitate—inter-provincial trade, and over and above all these troubles we have begun to feel the burden of taxation which before long must fall with even greater heaviness upon us as the war indebtedness of Canada is increased.

Our Opportunities.

It is in no spirit of complaint that I refer to these many problems, for I verily believe that as Canadian manufacturers our lot has been cast in pleasant places as compared with the lot of some manufacturers in the United Kingdom or in France. In times of war, we may expect hardships, and we must be ready to make sacrifices. From the day on which Belgium was invaded, "Business as usual" was an impossibility. That early war-time slogan was based on a great misconception. If we have troubles peculiar to these war times, an organization such as ours has also wonderful opportunities for usefulness, emphasizing how necessary it is for us as an Association to be constantly on the alert, and to maintain ourselves in a financial position where we can always give any reasonable service that may be asked of us.

Our regular services throughout the year have been well maintained, despite the handicaps under which we labored owing to the absence of three members of our staff with the forces overseas. But we were able to do what we did only by drawing on our meagre reserve, and we were forced to leave untouched many things to which we might with profit have devoted our energies, had our revenues been sufficient to meet the expense thereby involved.

The Canadian Manufacturers' Association, an organization with a membership representing so much invested wealth, enterprise and widespread activity, should at all times be above the necessity of counting coppers. Situations frequently arise where the judicious expenditure of a few thousand dollars would right a wrong, remove a grievance, secure protection against an impending danger, or improve a set of conditions—all to the material advantage of some considerable section of our membership. When problems of this kind present themselves, our Executive Committee should be unhampered by considerations of petty expense, yet hitherto with a limited income and a reserve smaller in amount than a single year's revenue, they have had practically no alternative but to allow many such opportunities for useful work to pass. Our income and outgoings should both be much greater. If we do nothing else at this meeting, I sincerely hope that we will take effective steps to put the Association on a sound financial basis, and to that end earnestly bespeak your favorable consideration of the proposal that will be submitted, to increase the annual fees.

When Criticism is Desirable.

Be it remembered that the real function of the Association is to give service, to advance and protect the interests of Canadian manufacturers, to foster the growth of Canadian manufacturing industries, and to assist in the development of Canadian export trade. So long as we keep within these general limitations, we are engaging in legitimate work, and within our sphere of influence. When we exceed these bounds, we are liable to both encounter and make trouble.

On occasions during the past year the Association has been criticized for voicing its opinion on matters that were more or less the subject of political controversy, and perhaps that criticism was well taken. It has long been our boast that as an organization we have no politics, that we are the slave of no political party, and let us hope that tradition will always be maintained. Insofar as any governmental policy may jeopardize or injuriously affect the manufacturing industries of this country, may we never hesitate to criticize where we believe criticism is due and will tend to restraint. On the other hand, we should always indeed more freely commend where we believe commendation has been earned and will be an encouragement to well-doing. Notwithstanding the fact that we embrace within our membership large numbers of partisans from both sides of politics, the cohesion of our organization is not likely to be disturbed so long as we confine ourselves strictly to what is our legitimate business. Within that field there is work to be done in which we will have a common interest, from which we will all benefit, and toward the accomplishment of which we should gladly unite. That work is much too important to justify us in taking any chance of wrecking the organization on the rock of Party Politics—something we might easily do if we are tempted to constitute ourselves a forum for the discussion of controversial matters.

As against this view, it is sometimes argued that the Canadian Manufacturers' Association—an organization priding itself on being national in its scope, influence and ideals—cannot afford to be without an official mind on national problems. Unquestionably the prestige and influence of our Association would be much enhanced, could we successfully assume a greater degree of leadership. The well-seasoned conclusions of a meeting such as this, for example, where any suggested public policy must run the gamut of criticism from men in every line of manufacture and from every part of the Dominion, could not fail to command attention and respect, providing they were unanimous, or nearly so.

But outside the sphere of industrial problems, the prospect of a solidarity of opinion from such a meeting as this on any subject would be poor, especially were it one upon which there was a divergence of political opinion. Thus it would

appear to be sound policy for us to confine our attentions to those things which we know we can do, and do well, rather than attempt a larger programme, in the carrying out of which we might only alienate the sympathies of a large number of our best supporters.

So far as criticism of the Federal Administration is concerned, wisdom suggests that every such organization as ours should move slowly and circumspectly in times like the present. We never have had and never in our time will have a perfect government. Perchance the present may be no better than its predecessors—but it has larger problems, greater responsibilities, and more difficult duties confronting it than any previous Canadian Government has been called on to face. Destructive criticism is useless! Can we show a better way? If so, express it. Do the Government courageously meet an awkward difficulty? Applaud. Are they vigilant and energetic and fair? Give them credit at least.

Mistakes of the Government.

As individuals, we are entitled to our opinions and are free to express them, but let us not forget that some things for which we most blame the Government are things the Government has been deterred from doing by the outspoken opposition of other individuals like ourselves. How much the better would it be were we all to give the Government credit for honesty of purpose and a sincere desire to do the right thing? They sometimes make mistakes, just as we make mistakes in our own affairs, and also would were we in their position, but honest mistakes, besides being readily forgiveable, eventually bring their own correction.

Perhaps this point has been unduly dwelt upon because of my unwillingness to believe that some of the criticism that has been levelled against the Government may have been quite as unfair and quite as unjustified as much of the criticism that has been levelled against the manufacturers. Man for man, the manufacturers are probably as good citizens as any other class in the community. They courageously kept the wheels of industry in motion at a time when the country was becoming panic-stricken over the prospects of unemployment. They have conscientiously applied themselves to the task of providing the materials needed for the carrying on of the war. They have worked indefatigably to surmount difficulties by which many an armchair critic would have been overwhelmed. They have responded generously to every call for subscriptions to the Patriotic, Red Cross, Naval, and other war funds, and have done their duty by the various Canadian war loans, yet it has become the fashion from one end of Canada to the other to revile them as profiteers, trafficking in the blood of their country, mainly because a comparatively small number of them have shown large profits.

Abuse of the Manufacturer.

It is not accounted unpatriotic of the farmer if he is now receiving good prices for all his products. The artisan is not held up to condemnation because he now receives four to six dollars per day in payment for work he gladly did for two and a half or three dollars before the war. The pay of the British soldier is one shilling per day, and maintenance, but the Canadian soldier is not thought to be bleeding his country because he draws $1.10 per day for similar services. Yet the manufacturer is scourged with abuse if he makes a profit on business which he accepts at a price in many cases below that paid for similar work and service to American or British manufacturers.

I wish to assure you, gentlemen, after full three and thirty months of experience, that the manufacture of munitions has been a long and hard struggle, which only the fit have survived. Of those who have been tempted to try it, many have lost money, some having been practically ruined. Others have done no better than recover their investment. Still others have made a small profit that hardly compensated them for the risk they incurred. A few have done well, but only because they, after great toil, mastered a most difficult problem and proved themselves especially efficient.

I have no hesitation in offering the opinion that the man who has made money out of the manufacture of munitions has richly earned it, for one reason, because of the price in brain and energy he had to pay to achieve success, and the dogged determination he had to show in meeting and overcoming especially the early troubles and great obstacles, and for a second reason, because his success has meant our country's success, and ultimately, I hope, the success of the Allied cause. It is to the efficient manufacturer, not the inefficient, that we are indebted for the present reserves of ammunition behind the firing line in France to-day. Here inefficiency would have lost us the war—yet the unthinking public in effect daily honors the munition contractor, who through his inefficiency has failed to make any money. Efficiency will win us the war—even so, that same unthinking public holds up to scorn the man who by his enterprise and perseverance has helped to save the situation.

The cumulative effect of this tirade of abuse is now being felt by our successful manufacturers in various ways. Notwithstanding the fact that wages are on an unprecedentedly high scale, it is being alleged that they are grinding the faces of the poor, and the demand is being made that they should pay still higher wages. Our legislatures are scaling up the compensation allowances, and in case of permanent partial disability are saddling industry with annunities that may easily represent more than 100 per cent. of wages when the latter are reduced to a reasonable basis, as in time they must be.

The Excess Profits Tax.

In some quarters it is being suggested that the supposed enormous profits made from manufacturing would justify the Government in removing the protection of the tariff. In other quarters it is being seriously advocated that the entire expense incurred through Canada's participation in the war be met by the taxation of business profits. Last year the Federal Government saw fit to provide itself with an emergency revenue by levying a tax on business profits, and although the amount secured largely exceeded their expectations, they have recently announced that that tax is now to be very substantially increased, presumably to some extent in deference to this uninformed public opinion.

It is greatly to the credit of manufacturers as a class that in the face of so much provocation they have avoided any display of resentment. They have paid and will continue to pay their war taxation with cheerfulness, trusting to a reasonable administration to secure them fair treatment. They have done their duty by the dependants of employees who have gone to the front, and will likewise do their duty by the soldiers who return. They will come to the assistance of the farmer this year, as they have done in other years, by releasing men to help him with the harvest. And they will pay high wages just as long as the condition of their business make it possible to do so.

But a time will come, gentlemen—and it may come sooner than some of us think—when the manufacturer will be unable to carry the load he is carrying to-day. Had he been asked five years ago whether he could continue to do business at a cost for labor and material such as he is paying to-day, he would have laughed the question to scorn. Yet he is in business and making a profit, but only because there are governments that still must have supplies and are prepared

to pay the price. That demand will collapse with the termination of the war, and prices will immediately fall. Twenty million, perhaps more, of the forty million men who have been withdrawn from producing and other occupations, will return to their homes and to such employment as may be offering. National borrowings of staggering proportions will have to be repaid, and the only way they can be repaid will be by the country's increased production. A world that for three years has to some extent neglected commercial production will suddenly apply itself thereto with greater zeal than ever, with the result, that we will witness an era of competition such as has never been known before. Under these circumstances all prices must tend steadily downward, and wages must do the same. The profits accruing from manufacturing will narrow in proportion until we reach a point where capital will temporarily cease to be attracted to industrial enterprise.

I have no desire, gentlemen, to appear as a pessimist, and I hope that I am not now creating that impression, for I have unbounded confidence in the ability and resourcefulness of our virile Canadian manhood to weather any depression with which we may be confronted. But a difficult situation can best be met by facing it squarely, and when we have made up our minds what the conditions are likely to be, then we should prepare ourselves as far as possible to meet them. How will we surmount these problems before us? I don't know yet. But surmount them we must, and we will.

After-the-War Conditions.

To all of us who have given the situation any serious thought, two facts must stand forth conspicuously. From the standpoint of production there will be gradually but surely cut off from us an export trade in war materials amounting now to perhaps $800,000,000 a year. Manufacturers cannot immediately adapt themselves to new lines of production, nor can they immediately find new markets. With the coming of peace there will necessarily be a period of pause, of readjustment, with delay of development until the general business situation becomes clarified sufficiently to justify the employment of capital in new ways. There will be a widespread release of labor now engaged in the manufacture of munitions and military supplies, probably numbering 100,000 to 150,000. These large numbers will be steadily added to by the soldiers returning from the front, for most of whom employment will have to be found.

This will constitute a very serious problem, worthy of most careful study, by both ourselves and our legislators. Unemployment can always be relieved to some extent by undertaking great public works, but efforts of that kind will afford us no real solution, for they will but add to our public debt when our energies should be devoted to reducing it by production. It is frequently suggested that a back-to-the-land movement should be inaugurated. So far as encouragement or financial assistance can be used to put back on the land people who know how farming should be carried on, and will really farm, that policy should be adopted, but unless great care is exercised, it is likely to miscarry, and leave us with a class of impoverished and discontented settlers, who will become liabilities instead of assets. Settlements of foreigners by communities under intelligent supervision and control may prove feasible in some instances, but ventures in that direction are not likely to be generally desirable or acceptable to Canada.

It may well be borne in mind that no solution will give satisfactory and permanent results that is not based on the principle of supplying as far as possible our own wants and producing in addition thereto something exchangeable at a profit for such commodities as we do not grow or cannot produce. Such a policy will lift us out of debt and set our feet on the highway of prosperity.

If this be true, it then follows that every form of production that will contribute to those ends should be systematically encouraged along lines that will best maintain an even balance throughout, and so ensure us a substantial and well-rounded development.

Agitation for Lower Tariff.

In this connection I regret to note the agitation that is being conducted in certain quarters in favor of a general lowering of the tariff. I admit that the tariff may need revision, and if any scheme of Imperial preferential or Allied reciprocal tariffs is brought into operation, that revision will necessarily have to be fairly general. But any material lowering of the tariff, at a time when Canadian capital and Canadian labor are facing one of the most critical periods of their existence can only be suicidal. Canadian manufacturers do not ask for anything more than a chance to produce, and to pay their employees a fair living wage. Under free trade we could not produce, and our employees in consequence would have to seek work elsewhere, probably in the United States.

Under a high tariff we could pay high wages and still make large profits for ourselves, but only by loading other forms of production with burdens that would check their growth. Somewhere between these two lies a happy medium under which all can live and let live, and it is in maintaining a moderate protective tariff that we bespeak the hearty co-operation of other producing forces. We must have food to sustain our manufacturing forces. We must have manufacturers to sustain our food-producing forces. Why should we not aim to be self-reliant, and supply both lines ourselves? It is quite obvious that if we can do so, we will be the richer and better for it.

In the troublous times still ahead of us, this country will need all the help she can secure from men of enterprise, from men of business capacity, who, when opportunities presents themselves, can quickly secure and employ the requisite capital to bring profitable industry into operation. Canada can best obtain that form of help by shaping her fiscal policy so as to create opportunities for home and foreign business, for, given opportunities, capital and enterprise will do the rest.

Canada's Service Under Protection.

The wisdom of a sound fiscal policy could find no better proof than in the magnificent service rendered by our manufacturers since the outbreak of the war. During thirty-five years of moderate protection Canada was able to build up for herself a large and varied industrial equipment of first-class efficiency. The speedy adaptation of that equipment, supplemented by very large investment in new plant, probably exceeding $25,000,000, for the production of munitions and war supplies, not only enabled Canada to render assistance of immeasurable value to the Allied cause, but it also enabled her to keep her workmen fully employed at high wages at a time when but for her possession of that equipment, and but for the enterprise of her manufacturers Canadian artisans would have had to seek employment beyond her borders.

Our National Policy of tariff protection never needed any justification, for the results always spoke for themselves, and if it did, then surely the wonderful achievements of the past two and a half years have furnished that justification in abundant measure, and discredited the free trade propagandists who have consistently sought to belittle the importance of our manufacturing industries. These industries have done yeoman service in the cause of freedom, not the least important features of which have been the contributions they

nave enabled Canada to make to the army in fighting men, and to the treasury in money.

And these industries of ours will continue to give a good account of themselves under a policy of moderate protection, for, notwithstanding new conditions, opportunities will arise which discerning manufacturers will be quick to take advantage of. Their enterprise has already been evidenced in the shipment of large amounts of railway equipment and material to the Allies. To reach its sphere of usefulness some of this equipment has had to be freighted half-way around the world. Further enterprise has been manifested in the attempts to build steel ocean-going ships, an industry new to Canada, but one that can be made an asset of great value to this country if given reasonable encouragement while endeavoring to establish itself.

Shipbuilding.

During the past two years the question of the inauguration of a shipbuilding industry of some magnitude has been the subject of a good deal of public attention. The matter has been discussed in Parliament. The press has given the subject wide publicity, and the loss of tonnage arising out of the war has probably brought home and focused attention on the need as well as the great advantage accruing to Canada by building up an adequate shipbuilding industry.

In 1884, 33 years ago, Canadian shipbuilding was at its high-water mark, the tonnage shown on the registry books of the Dominion for that year being 1,253,747 tons. The years following showed a steady decrease, and in 1902 only 652,613 tons were registered in Canada—or a decrease of almost 50 per cent. From 1902 there was a slow but fairly steady yearly increase, and at the end of 1916, the total tonnage registered in Canada totalled 942,598 tons, or 25 per cent. less than the high-water mark of 1884.

The tonnage of vessels built in Canada has shown an even greater decline—190,756 tons being built in Canadian yards in 1874 as against a total of only 43,345 tons in 1914.

This surely is not a very creditable record. We have in Canada to-day a number of yards building steel vessels, but with one or two exceptions they are all on fresh water, and but one on the Atlantic coast. Collingwood, Toronto, Port Arthur, Sorel and Montreal, have exhibited considerable enterprise in the face of little encouragement, and are to-day engaged in building tonnage equal in every respect to similar tonnage constructed in Great Britain or elsewhere.

Practically none of the Canadian-built ships, however, previous to the war, were engaged in Canadian ocean transport, and this for several reasons. Had Canada's iron and steel industry been developed at the time of the transition from wooden to steel ships, there is very little doubt that many of our wooden shipbuilders would have turned to iron and steel shipbuilding, and with great advantage to the builders and to Canada.

At this point it might be well to briefly review the tonnage output of the world. In 1909 the shipyards of the world produced approximately 1,800,000 gross tons of shipping, and in 1913, 3,300,000 tons, these figures representing the low and high annual productions of recent years. 2,740,000 tons can, therefore, be taken as a fair annual average for the past five years. Of this the United Kingdom produced 60 per cent., Germany 12 per cent., the United States (including its Great Lakes shipping) 9 per cent., and all other countries 19 per cent.

In June, 1915, the world's tonnage of merchant shipping amounted to 49,000,000 tons, of which Great Britain owned 43½ per cent., United States 12 per cent., Germany 10 per cent., and all other countries 34½ per cent.

In spite, however, of the feverish activity of shipbuilding yards all over the world, the total world output of tonnage in 1915 only amounted to 1,669,337 tons, and 1,956,791 tons in 1916, or nearly one million tons less than the average annual output for the past five years.

The year 1916, therefore, saw but comparatively little progress in the tonnage production over the previous year, while during the same period the loss of merchant vessels arising out of the war has been tremendous. The tonnage thus far destroyed has been over 4,000,000 tons, and it has been estimated that allowing for the probable production, there will be a total deficit in the world's tonnage at the end of 1917 of 6,500,000 tons. This deficit, if the submarine activity is increased or even maintained, may be much nearer 10,000,000 tons, and at the maximum capacity, it would appear as though the shipyards of the world will hardly be able to meet the probable requirements for a period of at least five years after that date.

Canada's Opportunity.

Surely, then, this is Canada's supreme opportunity. Our natural resources admirably fit us for this work. The movement of natural products in this country is on a large scale. Communicating with the Atlantic seaboard we have a river and chain of lake communication penetrating fully 2,500 miles inland. And the Maritime Provinces and St. Lawrence River offer excellent locations for the building of steel ships.

The career of Canada as a producing country is wrapped up in inland and ocean transportation. Her wide spread territory demanded railway transportation, and this she has secured at enormous public expenditure in money. In building her railways Canada has overcome large difficulties, and I firmly believe that were our ocean transport as well developed and managed as is our railway transportation lines, Canada would not only freight the great bulk of our export and import tonnage across the North Atlantic to Europe, but would also command an immense carrying trade to the Far East. The regrettable fact, however, is that owing to our lack of ships a large proportion of this trade now goes to the enrichment and building up of other peoples. And if the war continues a further two or three years, it is more than probable, indeed almost certain, that Japan will control the Trans-Pacific shipping trade.

A Small Canadian Tonnage.

On the Great Lakes, Canadian shipping amounts to only a small fraction of the lake tonnage. On the ocean, Canadian ships carry less than one-tenth of the produce sent out of Canadian ports, while very large quantities of other Canadian products pass through American ports. Previous to the war it was estimated that Canadians were paying over $50,000,000 yearly in ocean freights, almost all of which went into the pockets of foreign shipowners. During the present year it is quite possible that a sum approaching $200,000,000 will be paid as ocean freight on Canadian natural and manufactured products, and again the great bulk of this money will pass into foreign hands.

In passing, may I be permitted to refer to the wonderful work accomplished by Britain's mercantile marine for the Empire, and our Allies. Granted that the British Navy was supreme, without our mercantile marine the navy, and, indeed, the nation could not exist. Upon it were our troops moved overseas, over 7,000,000 men having been transported along with the guns, munitions, and stores required by the army. We have had to draw upon the personnel of the mercantile marine not only for the manning of transport ships, but also very largely for the manning of the whole of our patrol and mine-sweeping craft. Indeed it is impossible to

measure fully the debt the country owes to our mercantile marine.

To these services, vitally important as they are, was added the coaling of not only the Grand Fleet, but also the French and Italian navies, and the supply of coal to the steel plants and engineering shops of France and Italy, and further, supplying the armies and the people of the Western powers with food and with the raw materials for their workshops. More need not be said. The incalculable value of a nation's merchant fleet in time of war has surely been amply demonstrated during the past two years of stress.

American Experience.

Two years ago Admiral Benson, then Acting Secretary of the American Navy, was asked: "Considering the navy as it is to-day, and its efficiency in time of war, what number of merchant vessels and what total tonnage would be required?" He then answered, "There would be required 400 merchant steamers for auxiliaries with a total of practically 1,200,000 gross tons. In addition, were the United States coast invaded, or even occasionally visited by hostile craft, it would require at least say 325 small vessels fitted for mine sweeping, all of about or exceeding 150 gross tons each." The next question naturally asked is, "What proportion of these demands would the navy make on the mercantile marine as a whole?" It means that 67½ per cent. of the total American merchant tonnage would be required, entirely apart from the provision of small vessels for mine sweeping. This would leave but 32½ per cent. of the total American merchant tonnage to perform its usual functions. Note further, that not one American steamer would remain for transporting either troops or supplies to Europe. And this is practically the situation in which the great nation to the south finds itself at this moment.

The experience of the Americans in the building of their mercantile marine is of considerable interest to us, their shipbuilders laboring under much the same difficulties as we do in Canada. Some three years ago an investigation was carried on by Americans interested in the subject, when it was found that at that time the average wages paid in the shipbuilding industry of Great Britain was fifty per cent. less and the net output per wage-earner was fourteen per cent. more than in the American yards. Conditions, of course, are abnormal at present, and comparisons can hardly be made, but when peace returns it is doubtful if American yards, with their higher wages, will be able to compete much more successfully than before the war, with the principal foreign shipbuilding countries, and remedial legislation must be enacted to equalize the difference, if that country is to maintain and render secure the position they may hope to achieve in the next five years.

What course then should we pursue? Canadians have not hesitated to expend large amounts of money in the development of their railways—particularly the Intercolonial, and Transcontinental systems. We have given public aid to private railway systems to an even greater extent, and large guarantees of bonds have been made. On the other hand, very little has been done, particularly in a constructive way, in connection with our marine transportation. We have a canal system which since Confederation has cost us over $100,000,000, but the canals so constructed are open to our competitors, and over four-fourths of the traffic passing through the Canadian canals originates in the United States, and less than one-third of the ships using the canals are Canadian.

The selection of some particular method of achieving the desired result, is perhaps less important than the immediate selection of some definite method. That point settled, there remains the permanent practical problem of its application to equalize the cost of building and operating Canadian vessels, as compared with foreign competitors. However this be done, it must clearly be recognized that it is only by overcoming the differences in constructing and operating in this country and abroad, that the ship-owning industry can achieve and hold its proper place, and, if Canadians decide to make progress in this direction, they must make this payment as the price exacted of them by the conditions under which they live.

During the past year a considerable amount of unconsidered criticism has been directed at the advocates of a bonus system as an aid in the development of Canadian shipbuilding. We are told that owing to the abnormally high prices now being paid for ships and the extraordinary rates of freight prevailing, that a bonus is unnecessary, and the industry should be self-supporting. That is a very superficial view of the case. Present conditions are abnormal and industries built with the idea of permanency are not developed on such an unstable foundation.

It should not be forgotten that many of the orders now being executed in Canada are for the Imperial Government, whose assistance in financing, although not as effective as a subsidy, is nevertheless a very practical form of encouragement. So long as the war continues and the Imperial and other governments are in the field as buyers of vessels, Canadian shipyards will probably not lack for orders. But who can tell how long that will continue? And what corporation would be justified in the fact of that uncertainty in laying down permanent yards and the necessary engineering shops with modern equipment. An up-to-date yard capable of turning out steamers of the dead-weight capacity of say 60,000 to 75,000 tons annually, equipped with all the plant necessary for the economical construction and engining of steel vessels of this tonnage, would represent an investment of from two to two and a half millions of dollars, and would require as working capital the sum of not less than one million dollars.

The investment of $3,000,000 to $4,000,000 would only be justified by the assured prospect of long and steady production. The Canadian shipbuilder, knows however, that when the war is over, and the builders in the United Kingdom are free to resume the construction of merchant tonnage, he will be unable to compete, owing to the advantage possessed by the latter in the way of cheaper labor, wider experience, cheaper material, larger output, and greater specialization. If he were assured that bounties would be paid sufficient to equalize the cost of production, even though those bounties were not to become operative for another year or two years, he would be encouraged to lay plans now for future permanent business. In the absence of that encouragement, such orders as he accepts are being executed for the most part in make-shift shops, with a minimum of equipment, which can be scrapped as soon as the emergency demand for vessels cease.

Value of Steel Shipbuilding.

Steel shipbuilding on a large scale is one of the most valuable industries any maritime country could possess, because of the large number and great variety of subsidiary industries with which it tends to surround itself. We can and do make in Canada most of the materials that enter into the construction of a steel vessel, except the steel shell and boiler plate. It is true we make but little of the fittings. As regards the secondary matters of equipment such as pumps, winches, windlasses, anchors and chains, and equipment of that character, but little so far has been made in Canada, simply because the demand has been so small, and what demand there is has been spasmodic, while of navigating instruments and such necessary accessories we have produced none whatever.

A bounty that would provide sufficient encouragement would quickly stimulate the growth of shipbuilding, supply the incentive for the establishment of plate mills, and would lead to the specialization of our engineering trades. This would be followed by a two-fold advantage—first, in that it would shorten the time and cheapen the cost of constructing vessels and so make it possible for the industry ultimately to get along without a bounty, and second, in that it would open up a wide field for the profitable employment of our returning soldiers, and particularly of thousands of munition workers, whose present outlook is clouded with uncertainty. But above and beyond all these reasons, the building up of a Canadian mercantile marine will insure that the agricultural products of this wide Dominion, as well as its export of manufactured goods, will be carried not only over Canadian railways, and internal waterways, but their transport beyond the seas will be in Canadian bottoms, and the profits resulting therefrom would accrue to the advantage of the Dominion and add to our wealth instead of enriching foreign shipowners as at present.

To suggest that this is a matter which only affects and would inure to the benefit of the Maritime portion of the Dominion, is a narrow, short-sighted and quite erroneous view. The West is quite as much—in fact to a much greater extent—interested in the ocean carriage of its cereal and animal products, and the manufacturers of Ontario and Quebec, as well as those of the Western portions of the Dominion, as are the Maritime Provinces. And until the great bulk of Canadian produce of whatever character is carried to the markets of the world in Canadian bottoms, the country as a whole must continue to divide a large portion of its profits with foreigners, and in the event of war leave us practically helpless.

For these reasons, as well as others which time will not permit of referring to, it is earnestly hoped that the Government will soon announce a liberal policy for the encouragement of shipbuilding.

Technical Education.

If Canada is to find profitable employment for its growing population something practical must be done to promote the cause of technical education. To do so would be adopting one of the soundest means of maintaining a continuance of our industrial development. Capital, enterprise, and energy, can accomplish a great deal in promoting the welfare of any country, providing there is a foundation of efficient workmanship to build upon, but without that foundation our best efforts are doomed to failure.

Canadian workmen as a class are possessed of great adaptability, and a high order of natural intelligence, and quickly become expert machine operators, but the Canadian artisan outside of the engineering class, usually labors under the disadvantage of not having served an apprenticeship, and of having no opportunity to become familiar with the mathematics and the scientific principles upon which his work is based. In a young country like Canada, whose industries are in the making, there is a constant demand for men who know how things should be done, who understand the reasons why they should be done in a particular way, in the only way, and who can instruct others, and who, when things go wrong, can put them right. In brief, trained men who can be entrusted with responsibility. Neither our present factory system nor our educational system makes provision for the training of such men. In consequence of which our industries and our workmen both fail to make the progress they should, or reap the rewards which their industry entitle them to.

Other countries are far in advance of us in the practical effort made to increase the efficiency of our working forces by technical education. The industrial pre-eminence they have secured should be an object lesson to inspire us and determine us to do likewise. Attention was forcibly called to this situation four years ago by a report of the Royal Commission, but unfortunately nothing has yet been done in Canada to give effect to their recommendations. We have lost four years of valuable time, and will lose still more, for the real fruits of technical education take practically a generation to ripen, commencing as they must with the seed planted and the work done to develop the minds of the boys and girls in our public schools.

What Should Be Done.

While there may be constitutional difficulties in the way owing to the supposedly exclusive jurisdiction of the Provinces in matters of education, still the vital dependence of the trade and commerce of our country upon industrial efficiency would seem not only to justify but to necessitate intervention of some kind by the Dominion Government. Could not a conflict easily be avoided were the Government to finance technical education in the same manner that it is financing agricultural education, under the Agricultural Aid Act? However it be done, the main thing is that it be done, and I trust this meeting will not disperse without making some strong pronouncement upon the matter.

Another matter of pressing necessity in this country at the present time is that of the establishment of one or more institutions for chemical and industrial research. The Dominion of Canada possesses in its wide domain a great number of natural resources for the most part but very imperfectly developed, and in others entirely undeveloped. To successfully exploit and convert these into national wealth, the matter must be dealt with on a purely scientific basis. This is equally true and relatively equally important as regards our fisheries, our lumber industry, our mining development, our animal husbandry, and notwithstanding the fact that many problems press, this is one that we cannot neglect or unduly delay.

Railways.

Could we as business men reach a fairly unanimous conclusion as to the best solution of our railway difficulties, doubtless our views would be appreciated at Ottawa, for outside of the war itself, that is unquestionably one of the knottiest problems confronting our Parliamentarians to-day. Personally, I am not a believer in Government ownership and operation of railways, as applied to Canada, for try as we may, we cannot free their administration from the evil influences of politics. The wasteful expenditure of money in connection with extending the National Transcontinental from Levis to Moncton, when the double-tracking of the Intercolonial would have better served the same purpose, and would have greatly cheapened the cost of transportation, and the monumental folly of a railway line to Hudson's Bay, are striking examples of what we may expect if we widen the door of opportunity to men who seemingly cannot divest themselves of the influence of votes. To attempt to free the operation of our railways from politics by placing them in charge of a Board of Trustees, responsible direct to Parliament, is to delude ourselves with false hopes, for the Parliament that makes laws can unmake them, and when it would serve a political purpose to do so, may we not fear that the party in power would change the personnel of the Board without compunction? There are also other and weighty objections.

While I loath to express myself as in favor of giving further financial assistance to railways that are unable to operate at a profit, yet on the other hand, can we seriously

demand that such railways be now left to their own resources, for cost what it may, the credit of Canada abroad must be protected? Considering the fact that the present unfortunate situation has mainly been brought about by building railways too far in advance of the country's requirements, I am prompted to suggest that the solution would consist in creating a volume of traffic that would give us a return upon our investment. In other words, by the adoption of such fiscal and immigration policies as would the best and the earliest contribute to the increase of our production from the fisheries, the farms, the mines and the workshops of Canada.

If that plan were to be followed, it would, of course, necessitate further railway financial aid, possibly for a term of years on a gradually decreasing scale, and much as we dislike the thought of it, might this not be preferable rather than see carried out an extension of the principal of Government ownership on so large a scale as has recently been proposed, for we must not forget that the cost of equipment will be quite as great under Government control as under private ownership.

As Canadian manufacturers here assembled in annual convention, we naturally discuss and direct our attention to the manufacturing problems and factors affecting national industry. This is the real business which has brought us manufacturers from the Atlantic to the Pacific to this gathering to-day, but gentlemen of the Manufacturers Association, we meet here under the shadow of a great war—a war beyond all historic precedent—a war for the preservation of human liberty, in which not only the Motherland, the Sister Dominions, and our own country, but other Allied nations are vitally engaged. The titanic and deadly struggle in which your sons and mine, and those of many of our fellow-citizens throughout the Dominion, have been for many weary months engaged, thousands of whom have daily gone down to the Gates of Death, and many have already passed its portals, having won glorious immortality, sacrificing their young lives for their country and world liberty.

Canada's Gallant Sons.

It seems to me that it befits us now for a moment to turn our thoughts to them, to recall their courage, their endurance, their valor, their gallantry—those who have given all, those yet alive but who are daily risking their all—let us thank them, let us honor them—these gallant knights who have done so much to advance the glory, the honor of Canada, and the stability of constitutional government and freedom not only in this Dominion, not only in the Empire, but in Europe and the world.

To those members of the Association present or absent, whose sons have passed over to that great company of the immortals, who think of lonely graves somewhere in France, I respectfully tender my admiration of the nobility of your silent suffering, and my sympathy in your sacrifice.

Remembering what our brothers and sons have done and are doing, the valor and the sacrifice of Britain, the gallantry and endurance of France, the agony and crucifixion of Belgium, and the dreadful sufferings and losses of Serbia and the other Allies, recalling these things, it is our duty as Canadian manufacturers, as citizens living in this country—in prosperity, in comfort, no enemy yet on our coast daring to make us afraid, recalling these, it seems to me that we should work as never before—for production is essential. We must pay as never before. We should do it honestly, we should do it cheerfully. We should support and encourage the Government of the country, whatever be its political complexion, so long and so far as the members of the Government are actively and energetically engaged in prosecuting the war. Let us remember that they are human, not infallible, and generally quite as patriotic as ourselves. If we are to help as we should, and can, we must be open-handed, in some sense sentimental, and abundantly sympathetic.

Beyond all peradventure the day shall come, later than most of us had hoped, but come it must and will, when our arms will be crowned with undoubted and complete victory. When Militarism and Despotism as "Made in Germany" will be removed from off the face of the earth, and cease to be a menace to humanity during our time, our children's time, or that of our children's children.

A Farewell Word.

In conclusion I wish once more to express my appreciation of the honor I have enjoyed at the hands of the Association during the past year. I deem it a rare privilege to have been brought into intimate fellowship with so many of my fellow Canadian manufacturers and an added pleasure to have had the opportunity of being of some slight service. In relinquishing the high office you have entrusted to my care, my chief regret is that I have been unable to devote to its important duties as much time as I would have liked. This was not due to any lack of inclination or desire, but simply because of the distance which separated us from the centre of the Association's activities, and the pressure of other duties.

In that and in other respects you will, I well know, be better served in the year that is to come, for it is to our Vice-President, Mr. Parsons, my successor, rather than to myself that credit is due for the direction that has been given to your affairs. To him especially and to all of you I offer my best, my sincere thanks for the kind indulgence that has been shown me. To the Association I offer my best wishes for continued growth, for increasing prosperity, for greater opportunities for usefulness.

A TICKLISH UNDERTAKING.

Reconstruction of a Building in Imminent Danger of Collapse.

To rebuild a structure which is in danger of collapse and, at the same time, not to interrupt the work of the factory, was a task recently undertaken by a Montreal firm of contractors, when several other firms, including an expert from the States, declared that any attempt towards reconstruction would result in collapse. The factory was that of the Canada Box Board Company, and the work was undertaken by A. F. Byers & Co., Limited, under particularly difficult, if not dangerous, circumstances. The whole building is situated over a tail-race, near the canal. One of the walls had bulged out, and was only saved from collapsing entirely by the adjacent wall of Ogilvie's Flour Mills. The foundations were also found to be giving way, and in order to substitute steel for iron pillars and concrete for wooden floors, it was necessary to raise the whole building about three-quarters of an inch from its supports. As the weight of the building and machinery approximated 1,000 pounds to the square inch, this meant lifting a total of 3,600 tons. This was successfully accomplished without accident, and the structure was put upon temporary supports (which operation is known as shoring), requiring the use of 350,000 feet of timber. The foundations had also to be reconstructed, and, as the water was only out of the canal a week, men were working day and night on this job, which was completed recently. In the meantime the factory operations have been going on without interruption, and will continue while the contractors are constructing what will virtually be a new building.

THE UNIFYING POWER OF ASSOCIATIONS*

By SIR JAMES AIKINS

Lieutenant-Governor of Manitoba and President of the Canadian Bar Association

ONE reason, I understand, why I am asked to speak is that I am President of the Canadian Bar Association, and you desire to know what work is being done to create uniformity of law throughout Canada. That is a purely voluntary association, which, like other associations of that class, should be encouraged, for they give an opportunity for the development and application of public spirit, so useful in democracy. Our profession is not accustomed to laud its virtues; therefore it put last in the purposes of the Association those relating to itself, for instance, to promote cordial intercourse among the members of the Canadian Bar, and uphold the honor of the Bar. Such intercourse, like intercourse among the members of the Canadian manufacturers, creates confidence, and confidence is a fundamental base for successful business.

The Honor of the Bar.

The object I have mentioned presupposes that there is honor in the Bar to be maintained. Some may suggest a similarity between that and honor among a certain class of individuals who do not know the distinction between what belongs to others and to themselves. If so, such minded persons are like Dick the butcher, and Jack Cade in Shakespeare's Henry VI., who worked, conspiring together with others, to do away with property ownership that they might have everything in common and no money needed. Dick the butcher says: "The first thing we do, let us kill all the lawyers," to which Cade replies, "That I mean to do." A high compliment, for the traitors knew that they would have no chance while those who knew the law were alive to help in its enforcement.

Among the first expressed purposes of the Bar Association is the promotion of the administration of justice and uniformity of legislation laws throughout Canada. The importance of uniformity of business laws throughout Canada is obvious to you, who experience the disadvantages of differing laws in each province.

The third annual meeting of the Association is to be held in Winnipeg next August, at which progress will be reported. The Maritime Committee of the Association has been studying and reporting on the Bills of Sale and Chattel Mortgages Acts; the Quebec Committee on Succession Duties and Insolvency; one Committee in Ontario, with Mr. Ludwig as chairman, on Fire Insurance; another Committee, of which Mr. Henderson is chairman, has been successful in promoting the passing of the Bulk Sales Act in Ontario at last session similar to the Acts in other provinces.

The Committee in the western provinces has been assigned the duty of preparing a Draft Act for the incorporation and organization of companies, and has so far succeeded that a Bill has been introduced into the House of Commons which is being considered by the profession and will be further discussed at the next annual meeting.

It is a serious question now for consideration as to whether the time has come for the appointment by the provincial governments of commissioners to confer concerning common legislation for standardizing commercial law, as they have done so successfully in the United States. If this decision is come to, then you will be able to assist us in having the governments appoint such suitable commissioners.

An indirect result of the Bar Association is, by conventions such as you are holding now and by having the law of the several provinces relating to property and civil rights uniform in expression and principle, to bring into unity the scattered people and provinces of our Dominion. In this purpose every true-hearted Canadian, every organization and every province should join. This province has its own difficulties, but its history and the present temper of the people is such that you may safely regard it as a strong middle link in the Canadian chain of provinces. Its history gave it character and strength. The experience of the last fifty years in Confederation is the lamp by which we must now, for a time at all events, be guided. This province had moral beginnings in the two preceding centuries which gave it character and strength. Hudson, in 1610, found its gateway from the sea; a little later Radisson, a French fur-trader from Three Rivers, discovered its inland, and with business wrongs unredressed by France told of its richness to Prince Rupert. Hence the incorporation in 1670 of "The Governor and Company of Adventurers Trading into Hudson's Bay," and the grant of all this western land to that Company, who held it British for 200 years. Explored by another French-Canadian, La Verandrye, who built forts in it, including Fort Rouge, in 1735, now in the heart of Winnipeg. Traded over in the century following by French and English, and fought for between them by land and sea. Taken possession of in 1812 for agriculture and peaceful pursuits by the Selkirk settlers who journeyed from the Bay up its waters to the Assiniboine. Given English law by the Council of Assiniboia composed of representatives of those settlers and of the Hudson's Bay Company. And so it was through adversities prepared for its destiny—a British Province, the strong middle link in the Dominion chain.

A Tribute to Manitoba.

What vision and hope and faith possessed the makers of Confederation—those prophetic patriots—when for $300,000.00 they purchased from the Hudson's Bay Company the lands of this western country and made provision in the British North America Act for its admission into the Union. When thus admitted, Manitoba adopted the law of England of July, 1870, patterned its school and municipal system after those of Eastern Canada, and on this British foundation it is building a Canadian superstructure suitable to its own requirements. Vast numbers of its citizens are children of the foreign born or foreign born themselves, not English in speech, not British-Canadian in sentiment and ideals. Nevertheless, Manitoba is resolutely moving to attain its goal, an enlightened people united in action, in thought and in language to express it, so strong in itself, it may aid in creating that oneness in all Canada so essential to both national progress and power.

To attain solidarity in Canada, more than self-centred industry and accumulation of individual wealth is needed. History and experience have been telling us ever that each individual should be a useful worker and given an opportunity of developing an ampler life. With such strong citizens, Canada will be strong. We all should co-operate on the principle of each for all and all for each.

When we consider the Canadian enthusiasm and unexampled self-sacrifice of our 400,000 soldiers, whose chivalry

* Notes of an address delivered at the annual banquet of the Canadian Manufacturers Association, Winnipeg, June 14th, 1917.

and courage and splendid deeds have brought glory to Canada and pride to the British arms, when one considers the many lonely widows who are patiently enduring, when one thinks of the broken lives and constant suffering of returned soldiers, these strong convictions are formed, that outside of special protection given by the British North America Act to minorities, the principle of democracy must be made to prevail, that minorities must bow to the properly considered and expressed will of the majority, and that all who exercise the rights of free citizens should be compelled to perform the duty of protecting those rights. Those who come to us from other lands come not as a favor to Canada but by the favor which is extended to them from our nation, and they are not to expect any privileges other than the native born enjoys, and that, receiving benefit, they must share with all the others the burdens of national service. If they are not influenced by inward light and leading and by a patriotic conscience which impels them to serve their country, there may be imposed upon them a statutory conscience whose behests they will not be able to ignore.

THE COMMON GROUND OF RIGHT*

By H. W. WOOD

President of the Canadian Council of Agriculture

I HAVE a very full appreciation of the fact that you, as the representatives of the Manufacturers Association of Canada, and that I, as representative of the organized farmers of Canada, have not always seen fully eye to eye with each other. The fact is there have been differences between us that have seemed almost irreconcilable and still it is up to us to make the fullest and completest examination and investigation to find if there is not somewhere a high level on which we can meet with a common interest.

There are just two things in civilization—people and institutions. There was a time when there was only one and that was the people. From that time to this the people have been slowly, gradually, almost blindly building up the institutions that we have to-day to serve humanity. These institutions were not built by rule and guide. Necessity furnished the lash to drive these people on and on and on in the building of these institutions. They didn't know what they were building; they simply knew the necessities of the hour, of the day, and they built by the guidance of these necessities. These institutions have been built by all the people throughout all of the ages of progress of all the nations, and they have been built for the one purpose of serving humanity, and to-day we have a set of institutions in our civilization that are fully capable of serving all the wants, all of the necessities, all of the comforts of humanity.

But what is the condition we see? We see more unrest, more conflict, more hard feeling, more competition than we ever saw before over these very institutions that we have been building throughout all the ages of progress. Not only that, but we see the forces of humanity themselves in one final supreme effort to gain an advantage on one side and an effort to prevent that advantage on the other side, an effort that is so great that it even threatens the destruction of these institutions themselves and of humanity itself.

What is Wrong with the World?

Why is this? Why is it? These institutions are entirely sufficient to serve all the wants not only of all of the nations of the Allies but absolutely sufficient to serve all the wants of Germany. What is the matter with us? It is not the fault of the institutions. The dominant idea of the world to-day is that these institutions are to serve selfish interests and selfish desires, selfish nations, selfish classes, and the fact of the business is we have reached the point in the development of the institution and the development of selfishness where we are threatened by our own selfishness with our own self-destruction.

What is Germany waging this war for? Simply to get the control of the institutions of civilization to serve her own selfish desires at the expense of all the balance of the nations of the world. That is all that is the matter with it. Are we —are you as manufacturers, are we as farmers, guiltless of this terrible thing? Are we guiltless of this spirit of selfishness that has developed to such an extent that it threatens humanity itself? Until we learn to find, until we are enabled to find, that high level of right to every man, that high level of co-operation between every man, every class and every nation, this contest, this conflict of the selfish use of the institutions of this world will get worse and worse.

One of Two Things Must be Done.

We are at the parting of the ways. We have reached that stage in development when the whole situation of civilization has become so acute that one of two things has got to be done and done right now.

We have got to learn to co-operate, to make the institutions of civilization serve humanity, or we are going to destroy the institutions of civilization, destroy civilization and destroy humanity in our conflict for the possession of these institutions. Gentlemen, we cannot escape the situation that is before us. There has got to be cultivated in this world an unselfish spirit between the people, the classes, the nations, that will enable us to use our full strength, our full co-operation in an unselfish way to make the institutions of civilization serve humanity or else there is nothing but destruction before us.

Now the same laws run through the development of all the institutions of civilization. Let us look just for a few moments—and I will try not to keep you too long—at the development of the institution of militarism. That has been the most rapidly developing institution of all the institutions of civilization. It began, of course, down there in primitive times on a basis of individualism, the individual contending against his fellow individual, for advantages over the rude and crude institutions in their first stages of development. It came on up until it developed co-operative efforts and raised the communities from individualism to higher communities, the family, the tribe, the nation and on up to groups of nations, and now the whole world, the whole civilized world is co-operating in two great groups in conflict over these institutions. Co-operative development cannot go any higher than it already has gone except just one degree in militarism. You cannot divide up and strengthen each unity in this conflict any more without the destruction of the other; competition in militarism has got to break down in this conflict. That is the end that is devoutly to be

* An address delivered before the annual meeting of the Canadian Manufacturers Association, Winnipeg, June 13th, 1917.

hoped for in this war. But it has got to come. Co-operation has been developing all along. It has developed until it can't develop any longer without developing into universal co-operation. Now, there is such a thing as universal military co-operation. We have military co-operation in Canada with the Mounted Police Force, which is co-operating in a military way to keep down any other kind of militarism within our own borders, and it is keeping that down.

Now then the same development is taking place in the commercial world. The commercial institution is the greatest institution of all civilization. The fact of the business is, it is a synonymous term for civilization itself. You break down the institution of trade and commerce and you have broken down civilization completely, absolutely broken it down, and we are developing in the same way. The competition was between the nations, and now the latest co-operative competition has developed in the commercial classes. The classes are all co-operating to compete for supremacy over the commercial field.

The Coming War of Commerce.

We are proceeding under practically the same principles Germany proceeded under that brought her to take the stand she has taken to develop a superior strength to overcome the other classes, to get an advantage. It seems to me that is the principle we are developing on and we are going on and developing into; practically all the classes of commerce will be developed into two camps in the making of the final great confiict for commercial supremacy.

Isn't that true? Why do we do that? In the face of the peril of the world to-day can't we turn back from this competitive conflict? Can't we meet together as the members of one great, common human family and by co-operation among ourselves, by co-operation among the nations of the earth, turn back this tide of evil? Can't we bring the institutions of civilization to serve humanity to the very best degree of efficiency and possibility?

It is going to take the co-operative efforts of the world to do that; take the spirit we have always assumed in our dealings the one nation with the other. Did you ever hear a man, a politician, going out before his people and appealing to their vote—did you ever hear him recognize the rights of the people of another nation in this commercial conflict? Did you ever hear him suggest the co-operation of another nation? On the contrary he takes it as absolutely granted that each nation, that our nation, has a perfect and just right to get all the advantage we possibly can over the other nation. That is what is the matter with the world to-day.

An Appeal for the Pulpit.

Now, gentlemen, I won't keep you any longer. I want to appeal to you as a representative of the organized farmers of Canada and as President of the Canadian Council of Agriculture—I speak in an official capacity. I can't speak for all of my people, but I do speak to you as a leader of these farmers, and I say that the desire of my life, the deepest desire of my soul is to see the interests of this country come together and try to measure their relationship by the very highest law of right that is known to men. As a representative of the farmers of Canada, not speaking for all the farmers, understand, but speaking as a leader of the farmers, I want to say to you that I want the interests of the farmers measured by the very highest law of right, but I don't want another single thing above that. Right is what we want; right is what I want and right is all that I want.

Now, I believe that the majority of the men in this house, and when I say I believe it I mean that I believe it, that the majority of the men in this house want exactly the same thing.

But I believe another thing, I believe that you are not making the effort to find that that you should; the people of civilization are not making the effort they should to find that common ground of right, and that is the appeal I make to you this morning. We must find this common ground, we have got to find this common ground. The existence of civilization at this minute is threatened because we have not found that common ground, and it will be threatened every minute until we do find that common ground, and it is up to us as men, as men that do not want to die as the beast dies, do not want to live as the beast lives in an atmosphere of absolute selfishness. We want to do the best thing in this life to use our lives for the best purpose, and I appeal to you to make a greater effort than you have ever made. Every element of civilization is appealing to every man in this audience, every man in the world that is capable and competent and responsible, to make a higher effort than he has ever made, and that is the appeal I make to you this morning. I thank you for your attention.

PROTECTION OF EYES FROM HEAT RAYS.

Information concerning glasses for protecting eyes from injurious radiations is contained in Technilogic Paper No. 93 of the United States Bureau of Standards, a publication of 14 pages, which may be obtained at five cents per copy from the Superintendent of Documents, Government Printing Office, Washington, D.C. The work on which this report has been made was undertaken in response to frequent requests the bureau had received for such information. Special attention is given to glasses which shield the eyes from infra-red or so-called heat rays. Data are given showing that of the infra-red rays emitted by a furnace heated to 1,100 degrees to 1,000 degrees C., (1) about 99 per cent. are obstructed by gold-plated glasses, (2) about 95 per cent. by sage-green or bluish-green glasses, (3) about 60 to 80 per cent. by very deep-black glasses, and (4) about 60 per cent. by greenish-yellow glasses. At higher temperatures these data would be somewhat different, but not sufficiently so to modify the estimates dealt with in this paper.

VALUE OF HOT LUNCHES.

Employers Make Inquiries Regarding Vacuum Bottles.

Employers of labor often find that many of their men show less energy in the afternoon than in the morning. The decline is evidently due to what happens at noon. Experiment shows that men who eat totally cold lunches, with no hot drink, or poor and greasy "meals" costing ten or fifteen cents, are affected more or less, according to their vitality.

An Ohio manufacturing concern is receiving inquiries from factory owners as to the value of vacuum bottles in keeping up health and efficiency. Manufacturers are considering proposing to their men that the latter bring hot drinks or foods from their home in bottles. The men could buy the bottles either through the foremen or at stores.

Handy food lunch kits containing a lunch box and a vacuum bottle are used in many places by carpenters, builders, bridge workers and cement workers. Coffee, tea, cocoa and soups can thus be enjoyed hot and refreshing at noon and the work will go on as well after dinner as before. —*Manufacturers' News.*

ORGANIZING FOR INDUSTRIAL RESEARCH*

By PROFESSOR R. F. RUTTAN

Director Department of Chemistry, McGill University, and Member of Advisory Council on Industrial and Scientific Research

AMONG the different interests in this country with which the activities of the Advisory Council come in contact there is none comparable in importance to that of the Manufacturers Association and the manufacturers of Canada. We are in contact with the agricultural interests, the universities, the fisheries, mining, metalurgy and so on, but it is chiefly along the lines of manufacture that we hope to bring about improvements and developments in this country. It is there that research comes in and we have come before you to ask you to help us to form public opinion, to help us to lead to an appreciation throughout the country of the vast and fundamental importance of scientific methods and scientific research in all industries.

The Scientific Method.

It has been very well said, it doesn't make any difference what you teach a boy but it is how you teach him. If you introduce the scientific method into the schools, the scientific method of teaching, that method will spread, will form part of the life of that individual and will help him in his later years. The same thing is absolutely true with regard to university education as well as to common school education. It is absolutely true with regard to the development of industries that systematic scientific method must lie at the foundation. That is one of the things we are trying to develop in Canada.

A great deal of help has come to us through publicity. The universities have helped us, the trade journals by their articles, the various publications of the learned societies have all directed public attention, and to a great extent effectually, towards the importance of the development of this scientific habit of working. But, the public is now demanding something more concrete than these generalizations with regard to the importance of scientific research. They want something that is definite, something that is more exact, something that is practical, and the question is how are we going to develop scientific research? That is the great problem that is attracting the attention to-day of the advisory councils that Dr. McCallum referred to in England, Australia and the United States as well as our own. How is this to be carried out?

Chemical Research.

Supposing we take just one particular branch, the one I am more interested in and know more about, that is to say the chemical industry, chemical research—industrial chemical research. Now, industrial chemical research and the introduction of chemistry into works may be carried out in a variety of ways. Almost all of the large industries are dependent more or less on chemistry in some particular part of their work. The consequence is that most of the large industries have what is known as a testing laboratory. That is elementary, the first stage; these tests are applied to materials coming in, they may be mechanical or chemical, and probably to the finished product. In this testing laboratory the operations are carried out sometimes by boys, certainly not by a skilled chemist, and progress along those lines is almost impossible as methods traditional to the business are alone employed.

Then we have the next stage in which we have laboratories which may be described as control laboratories, efficiency laboratories where the progress of the work is watched; the crude material carefully checked up and standardized; the waste materials are utilized wherever possible; the product that comes out, the finished product standardized and all the processes, the different stages are being watched, and the efficiency of each stage tested, experimented with and perhaps improved. Now, in this laboratory we may have industrial research or we may not; we may have this laboratory conducted by a young, cheap, inexperienced chemist under the control of the foreman, doing exactly what he is told and no more, probably as Sir William VanHorne expressed it, tied with a halter to his laboratory bench and never allowed outside. That type of work, that kind of chemical work will not lead to advancement. If this type of laboratory is presided over by an educated chemical engineer, a trained man who is trusted by the staff, who sees the work going on from one end of the establishment to the other and is able to think it over and consult the manager, then his laboratory experience and his experiments will probably lead to rapid advance and to an increase in production at lower cost.

Indirect Experiments.

We have also the third type of laboratory, which is very rare, in which researches of more fundamental character are carried on, researches which have no direct bearing at all upon the operations going on in the works but which ultimately will prove of enormous value in the advancement of the industry. We have a few cases of that sort in the United States, a vast number in Germany, and one or two only in England, where men are paid large salaries and where a large staff is engaged in processes which are carried out usually in university laboratories, researches which we would designate as academic and not practical, as for instance, many researches that are being carried out in the General Electric, in Dupont, in the Kodak Company, and in a large number of other companies that might be mentioned. These researches are published in the scientific journals and have little or no industrial bearing directly or indirectly but are very often productive of great wealth. Without quoting examples, there was a research on the dissociation of the hydrogen molecule into atoms of hydrogen going on in the interior of an incandescent lamp by one of the chemists in the General Electric which led to the most recent and probably one of the most important improvements in the electric lamp. That was an abstract research which has led to very great practical results; they were not sought for, they came of themselves.

The Small Manufacturer.

Now, this is all very well, you say, but it is only enormously wealthy firms that can afford to carry on research. What about the smaller manufacturer? There seems to be very little doubt that the small manufacturer in future competition, particularly where chemical operations are involved, will suffer tremendously in competition with his more wealthy competitor. There is no doubt he is going to be seriously handicapped. Now comes a question, How can he be helped? What can the Government do? What can such

* Address delivered before the Canadian Manufacturers Association at the annual meeting, Winnipeg, June 13th, 1917.

an organization as our own do towards helping the individual manufacturer?

The individual manufacturer on a small scale is as utterly incapable, financially, of carrying on research work in his industry as a farmer is in connection with his farm, in connection with agriculture generally. Now the Government is trying to, and has helped the farmer very greatly, by means of agricultural colleges and experimental farms all over the country. The same thing is true in fisheries and mining, but there has been nothing done for the small manufacturer. The question is what can be done? It is a very complex question, it is a question that has not yet been solved; it is a question on which we will have diverse opinions. If I point out two or three ways in which it can be done, I would like very much either to-day or at some other time to have the opinions of the Canadian manufacturers as to what they consider to be the best proceedings.

The Universities' Help.

There is one thing open, the small manufacturer can go to the large, well-equipped laboratories of the universities and say, we have got this problem, we would like you to solve it. The universities are willing to do their best to carry that out. But that cannot be regarded as the function of the universities. The universities are established for the purpose of teaching and training, and the time of the professors and the staff is very fully occupied in carrying that out, and the result is that the governors of our universities hesitate in encouraging this type of activity fearing it might be carried to excess. I for one feel that the magnificent equipment and fine buildings we have in some of the universities of Canada should be held by the universities with feelings of trust; they are in a sense holding those in trust for the people and they should realize that the people have a right to look to these universities for a large amount of help in connection with scientific industrial work. Now that would not be of general application.

Another method would be to encourage a large number of consulting chemists and specialists throughout the country to whom the small manufacturer could go. That would probably help to a certain extent. Another method would be by co-operative research. Now there is a great future for that. If we had the manufacturers along one particular line with sufficient confidence in one another so that trade secrecy would not be carried to an extreme, but who would agree to get together and to have co-operative research work carried on in laboratories under their control, for their special purposes, they would only be doing in Canada what has been done in the United States with enormous advantage. The canneries and a number of other united industries have got some of the finest and best equipped laboratories in the United States, and they are doing magnificent work. The Government might help in those cases, and probably would be glad to do so.

The Case of the Textile Industry.

I want to try and keep away from special industries, but supposing we take the textile industry. Here is an industry in Canada which is not being helped in the least degree; there are no laboratories in the country that are helping to standardize, or in any way helping that industry with its great and numerous problems. If we had established in Canada a central institute of research, I don't care where it is established, whether at Ottawa or Winnipeg or Toronto or Montreal, provided it is established on a sufficiently large scale and absolutely outside of politics—scientific industrial research could be efficiently controlled. Such an institute as that sufficiently well endowed, and I believe it is coming, would contain certain wings devoted, we will say, to fisheries here, agriculture there, paints, etc., there, and iron and steel somewhere else, where not only control experiments are carried out, but researches fundamental to the whole industry, and, where problems are found to be general, those could be solved by a general research department, as for instance the chemistry of colloids which lies at the foundation of the rubber industry, of all paints, etc., these could be carried out in such an institute as that with enormous advantage. In addition to that we could have what this country needs very much, a bureau of standards where standards could be fixed for the different industries; wherever a particular industry would get together and say we want such a thing standardized, that standard could be fixed, and fixed on scientific principles. Such a central institute would form a sort of crowning stone to organized research throughout Canada. That would be another means of meeting this demand for industrial research and probably would be very much better than the alternative that has been suggested, namely, a number of local bureaus.

Now, gentlemen, I know some of you are strongly in favor of establishing local bureaus and local laboratories. Let me point out some of the difficulties in connection with it. We will say in the city of Toronto or Winnipeg that we have a local bureau. You put into that bureau as an expert the best all-round man you can find. He has got to be a chemist; he has got to be a physicist, and he has got to be an electrician and an engineer, he has to know the litrature of all these different sciences. Unless you were to multiply him by as many sciences or as many industries as were to be conducted you could not possibly have an efficient bureau of reference or an efficient research bureau carried out by one or two men. It runs into tens or hundreds of thousands a year to establish efficiently any such bureau as that.

Value of Reference Libraries.

There is a necessity, and something which we are looking forward to, and that is the establishment of reference libraries on industrial subjects in the industrial centres of Canada. In the cities of Canada such a library bureau as that could be very well established; but for laboratory work I am convinced that a central institution is the thing which will solve the problem to greater advantage than having local laboratories except perhaps where there are but one or two industries interested. This plan does not encourage the development of new industries.

In addition to this question of research we are often brought face to face with propositions of an industrial character which no individual or no corporation will take hold of for the reason that the preliminary experiments will be too expensive and too extensive and the result too uncertain to justify the investment of capital. Even where an economic result has been reached it might be found that the profits would not be large enough to attract capital. We have to consider these in the council. We have to advise the Government or to get means to start these projects going, if they are of fundamental importance to the welfare of Canada and to its industrial development.

Now there is one case I might refer to, one which is next door to us, and that is the question of lignites in the North-West. As you know there is an area just west of us, where coal is never less than $12 to $15, that is, anthracite coal, where you sometimes cannot get coal at all in the winter, and yet that whole country is underlaid with low grade fuel which is called lignite, which cannot be exported and which cannot be kept; as soon as it loses the 30 to 40 per cent. of

water it contains it crumbles down to dust. Now comes the question as to how that can be utilized. A great deal of work has been done on it, but the very first question we tackled seriously in the Advisory Council was how to warm up the North-West just in this particular area west of Winnipeg and in Saskatchewan? Can we utilize this low grade fuel? We have spent a great deal of money on it already and we think we have got the problem solved.

We have sent trained men all over the United States wherever bricketting was done, wherever they were working with any form of lignite; experiments have been carried on to a very great extent in the Department of Mines on the quality of our lignites; researches has been carried on in our universities to find out what could be obtained from them and the conditions under which they could be bricketted. As the first step, we have practically recommended to the Government, who were rather startled at the figure, but we seriously hope they will go through with it, a plan to convert this raw lignite by a process of carbonization and bricketting into a material which, weight for weight, is absolutely equivalent to anthracite, the same number of British thermal units are to be found in the brickets as are to be found in anthracite itself; and it is possible to prepare that fuel, at the most liberal estimate, for somewhere in the neighborhood of two-thirds of the cost of anthracite. Now this is a problem which we have worked out. We hope that the Government will accept our recommendation, because we have firmly recommended this, but the cost is somewhere in the region of nearly $400,000 to construct a plant which will turn out from 100 to 200 tons a day, and deliver them from Winnipeg through the various towns in the west. We only expect to demonstrate the commercial success of the process and then hand it over to the provincial governments to operate.

I have to thank you, Mr. President and gentlemen, for this opportunity. I appreciate very much the chance of speaking to the Manufacturers Association, and through the president would express our wish that you will exert your influence as far as possible to create a desire throughout the country for a more scientific method of working, and that you will send in to the Council as many of your problems as possible, either through the forms which are going out now or by special correspondence, and they will receive the closest possible attention.

VARIED ADVERTISING.

The Link-Belt Company have recently been issuing some new and tasty advertising booklets, which are well worth the attention of manufacturers interested in the labor-saving appliances into which the link-belt principle is introduced.

"The Ideal Drive for Cement Mills" describes the large link-belt silent chain drive installation at the plant of the Nazareth Cement Co. at Nazareth, Pa.

"Link-Belt Wagon and Truck Loaders" shows, with many fine illustrations, the labor-saving device for the loading and screening of material such as coal, stone, sand, foundry refuse, etc.

"Link-Belt and Sprocket Wheels for Sawmills" is, as the name implies, a well-illustrated booklet dealing with the machinery of the sawmill, and showing how the link-belt may be profitably introduced.

A GROWING INSTITUTION.

Annual Report of the Merchants' Bank Shows That Good Progress is Being Made.

The Merchants Bank of Canada, which closed its year on April 30, presents a statement to the public reflecting most satisfactory growth. The Bank's assets now reach the substantial total of $121,130,558. In this large sum are included such solid investments as Canadian, Municipal and British and foreign public securities to the amount of $11,263,196; Dominion and provincial government securities, $3,862,507 and railway and other bonds, debentures and stocks, $3,964,-251. The Bank's call loans aggregate over $8,000,000.

Deposits bearing interest now total over $65,000,000, while deposits not bearing interest amount to over $27,000,000. The statement finally shows a balance of profits of $421,292, an exceedingly good showing. Altogether the statement, as set forth elsewhere in this issue, should be most reassuring to the Bank's many customers and satisfactory to its list of shareholders.



Six Easterners Make Merry Between Business Sessions

From left to right, R. W. Waterhouse, Ingersoll; Wm. Rutherford, Chairman, Montreal Branch; Lt.-Col. A. F. Hatch, Hamilton; J. A. McMahon, Hamilton; Arthur W. White, London; Thos. Jackson, Clinton

DUTIES OF OUR CANADIAN MANHOOD*

By S. R. PARSONS

President, 1917-1918, Canadian Manufacturers Association

UPON this, the first public occasion, when, as your new President, I am charged with the responsibilities of office, it seems fitting to acknowledge, in a more public way than was possible at the time of the election of officers earlier in the day, the honor which you have conferred upon me.

I have always thought that the Presidency of the Canadian Manufacturers Association was the greatest distinction that could be bestowed upon a business man in the Dominion of Canada. That I feel myself unworthy to follow, and incapable of emulating, the illustrious men who have held this position in the past should, I think, go without saying among those who know me. I am reminded, however, of an incident that occured at the front recently when a Canadian commander, who had received his death wound, called upon the next in command to *"carry on."* This phrase has received especial emphasis in connection with our military life and work during the last three years, and in this spirit, applied to all our activities, one lays down his burden of office and another takes it up. I am also reminded of the counsel contained in the good, old Book, "Let not him that girdeth on his harness boast himself as he that putteth it off," and in view of the fortunate fact that the President of the Association is supposed to give his chief address at the end of his year's tenure of office, I shall simply say to you in this particular connection that I shall do my best, with your assistance, to *"carry on."*

Things Worth While.

I am sure that to all of us has come during these recent years, in larger measure than ever before, the sense of things that are worth while. If we are not bigger, broader, nobler men, these years, so fraught with events of gigantic importance, have been lost upon us. There should be an enormously increased interest in the men in our employ and in our fellow men generally of all classes, races, and creeds. One of our Canadian humorists, who lives in the country, stated recently that of one of the early settlers in his locality it was common comment that "on Sundays he was a Presbyterian, but on week days he was a neighbor."

Now that our annual meeting is drawing to a close and we have been considering present and past war conditions connected with matters of trade and commerce, as related particularly to the manufacturing industries of the Dominion, it might be well to turn aside from the *making of things*, which necessarily has engaged so much of our thought, and turn our attention upon the *making of men*. The war has cut very deeply into our views of social, political, and national life and it is impossible for us to go on in the old way and disregard the facts and signs of the times. Mr. Balfour stated in Ottawa recently, "We have staked our last dollar on democracy, and if democracy fail us we are bankrupt indeed." The war is a great leveller, and men who have fought side by side in humanity's common struggle, or taken their full share of responsibilities in the home life of the nation, must have had engendered in them the spirit of camaradérie, which will bind them more closely together in times of peace. Shakespeare makes Henry V. say to his band of followers in France:

> "We few, we happy few, we band of brothers;
> For he to-day that sheds his blood with me
> Shall be my brother; be he ne'er so vile,
> This day shall gentle his condition."

There never was a day when the so-called common people, of whom Abraham Lincoln once said, "God must love, too, or He would not have made so many," were being more considered and their rights respected. Co-operation should, therefore, be our keynote to a greater extent than ever before. I believe that, as manufacturers, we are thoroughly alive to the interests of all those who are in any way associated with us in our various and widespread enterprises and also of the larger circle outside; we have liberal views of our responsibilities, believing that industry is not solely for the benefit of those who engage in it. We believe, though, most thoroughly in the gospel of work and realize that the difference between success and failure in many cases, whether of employer or employee, or those in any other class, is that of strenuous application to the tasks in hand, as compared with a shirker's attitude. What we need, therefore, is fewer parasites and more producers.

This leads me to say in this connection that it is a great satisfaction for us, as manufacturers, to meet our fellow producers, the grain growers and farmers of the West. Those who till the soil and produce the commodities to feed the world, particularly at present, stand in a privileged relationship to the rest of mankind. Here in the gateway to the great granary of the British Empire it is well to recall the words of Goldsmith, our philosopher-poet:

> "Ill fares the land, to hastening ills a prey,
> Where wealth accumulates, and men decay:
> Princes and lords may flourish, or may fade;
> A breath can make them, as a breath has made;
> But a bold peasantry, their country's pride,
> When once destroy'd, can never be supplied."

I am sure we all agree fully and completely with Goldsmith as to the great value of the agricultural class to any country. If one might wish to go further in considering the quotation he could perhaps well say that the consensus of opninion in this country is that great public services should be adequately and ungrudgingly recognized and marked, as for instance in the case of our distinguished guest, His Honor Sir James Aikins, Lieutenant-Governor of this Province, whose public services in behalf of Law, Politics, Higher Education and Religion, have been constant for a generation. Any general attempt, however, to create a titled class—hereditary or otherwise—should be jealously guarded as being at variance with our present national and individual democratic spirit and ideals. With democracy, in the person of Lloyd George, in the saddle and giving the lead to the nation's affairs, this view, even in Great Britain, is receiving strong support to-day.

Mr. Asquith once defined the British Empire as "an ever-increasing community of freed men," but this freedom brings with it obligations towards the body politic which should not be overlooked or shirked. It appears to me that there are many manufacturers, throughout the Dominion of Canada,

* The inspiring address of the new President of the Association, delivered at the Convention Banquet, Winnipeg, June 14th, 1917.

who are or could be retired in part and who could serve their country in public ways to very great advantage. If "it is what a nation gives and not what it gets" that counts, it must also be true of individuals, and there are doubtless among our members many men well qualified for public service, as has been shown by those who have recently been called to the aid of the government and have given such a splendid account of themselves. While as a class, or as individuals, we do not pretend to be angels of light, yet a definite impression exists that an infusion of business men into our public and political life generally would be of very great value. The trouble is that, while we have ideals of service, we do not put them into effect and, therefore, are more or less cursed by them.

A Corrupting Influence.

In a recent issue of the *London Times*, Earl Grey, who knows our Canadian public life very thoroughly, stated:

"In Canada the necessity of the two contending political parties to obtain an electoral majority in every district is a corrupting influence which poisons the life of the people from the Atlantic to the Pacific."

His further words, pointing to a remedy, are eminently worthy of our most earnest consideration:

"We want a just and complete democracy and not a democracy privileged and incomplete. Proportional representation is complete democracy. It gives representation to substantial minorities in proportion to their strength; it secures fair and equal representation to all, and the rule of the majority. Unlike our present system, it gives freedom of choice to the elector by enabling him to vote against the nominee of the caucus without throwing away his vote. Unlike our present system, it opens the door of the House of Commons to men of high character, with national, not party, ideals, and enables them to retain their seats against the opposition of the caucus. Proportional representation thus provides a complete democracy, with its own just and natural safeguards for the preservation of liberty, and against the evils and dangers of enslaving tyranny."

If proportional representation will do all this for us we certainly stand in dire need of it, as, in any case, we need to waken up to the fact that party politics in Canada has, to a large extent, reached the stage of a slimy mess; that from the ward heelers in our towns to the seats of the mighty at Ottawa and our provincial capitals, there is a more or less distinct trail of blind and unworthy partizanship which elevates party above country and looks askance at graft, dishonor, and the evils of patronage. We have, of course, very many splendid public men and heads of governments, who are honest, capable, and serve their country with great distinction. He, though, is no friend of his country who, while recognizing the good, shuts his eyes to the crying evil.

Taking up the Burden.

Shall we continue to bemoan the conditions and let it go at that? Better to turn the key in our national house, let grass grow upon our streets, and admit that we are a nation of incompetents, poltroons, and degenerates! But I believe we are determined to clean up the situation and I have more faith in our Canadian manhood than to think that our defections are like a deadly cancer, rooted in our very existence and eating out our vitals; they are, rather, excrescences which need the surgeon's knife and disinfecting agent. There never was as good a time for such treatment as the present when war expenditures are placing upon us enormous burdens of taxation, requiring the utmost thrift, integrity, and good management to carry us safely forward.

These are surely days for plain living and high thinking, days when there is a compression of life, and days which summon all that is heroic within us to stand like men in meeting our duties—whether they be personal, social, local, or national—so that with faces set and grim determination in every movement, not without hope, we turn our eyes to a brighter sky which, please God, shall soon shine upon us.

CONCRETE BOARDS.

Enable Builders to Erect Houses After the Manner of Frame Structures.

Boards of concrete, with joists, rafters and stair frames of the same material, are used in the construction of a novel building in Los Angeles, Cal., the whole being set upon a concrete foundation, says the *Scientific American*. Though put together after the manner of a frame structure, the building is as fireproof and durable as the more common types of cement houses, but it requires less material and is lighter in weight.

The various parts are poured into forms on the ground near the site, and in that way the danger of breakage is eliminated. The clapboards are poured in sets of ten, the forms being securely clamped together, and the cement allowed to harden in them for several days. Then they are taken out and allowed to cure before being set up. This should be done while the preliminary work is going on, such as excavating and laying the foundation.

The joists, rafters and other parts are formed in the same manner, and various types of reinforcing are used for each. The boards are reinforced with mesh like chicken wire, while the timbers have iron rods of varying thickness to strengthen them. These are allowed to project at one end in order to fit into corresponding holes in other timbers, so that the whole framework dovetails. The method of attaching the boards to the 2 x 4's is with nails, and nailholes are bored into the cement boards before they have set, by running a wire through them. As the cement timbers will not take the nails, a strip of wood about an inch and a half thick is wired to the cement scantling. The advantage of this type of concrete structure is that it is light in weight and therefore does not require a very heavy foundation, and the building method allows an air space between the outer wall and the plastered interior.

RECLAIMING SHELLS.

A grinder that reclaims shrapnel shells has recently been adopted by munition manufacturers for the purpose of removing imperfections from the inside of the steel cases. The shells must be very smooth on the inside, and some manufacturers have had many rejections on account of rough spots on the interior walls. To remove them by the use of scrapers was an expensive process and not altogether satisfactory. However, by means of the new grinder, which consists of a grinding wheel operated by an electric motor through a flexible shaft, it is now possible for certain shell manufacturers to reclaim thousands of dollars' worth of shells that were once rejected. The grinder, continues *Grits and Grinds*, is fitted with a small electric lamp which illuminates the interior of the shell.

PROCEEDINGS AT THE BANQUET

A Report of the Final Gathering at the Winnipeg Convention, June 14th, 1917

THE proceedings of the Winnipeg Convention were brought to a close by the customary annual banquet of the Association, a function well-attended and much enjoyed by all present. The chair was occupied by the new president, Mr. S. R. Parsons, who presented the various speakers and generally performed the duties of toastmaster with the utmost acceptance. The guests of the Association on the occasion were His Honor, Sir James Aikins, Lieutenant-Governor of Manitoba; Mr. W. B. Lannigan, Assistant Freight Traffic Manager, Canadian Pacific Railway Company, Winnipeg; and Mr. T. A. Crerar, President, Grain Growers' Grain Company.

Sir James Aikins, whose speech is featured on another page, was introduced by Mr. Parsons, as an old and very highly esteemed friend.

"Sir James," said Mr. Parsons, "has served in many public capacities with conspicuous ability. I once heard a French-Canadian politician of considerable note in the City of Montreal say that he had evolutioned from politics to honesty. Of course that can't be said of our distinguished guest of this evening, for he always was honest. In public life, in political life and in private life wherever he has been called upon to transact the business of life, to move in public or private, he has always borne himself with integrity, with honesty and with the ability which you, in this western country particularly, know more about in late years than I do."

Mr. Lannigan's Humor.

Mr. Lannigan, who followed Sir James on the toast list, provided the humorous note of the evening. His speech was brimful of wit and was greatly enjoyed by those present.

"I trust, Mr. Chairman," he began, "you will pardon in me this evening that peculiar diffidence so natural to a westerner in approaching a topic of national interest. My embarrassment is somewhat heightened this evening by the fact that I am called upon at such short notice—I only heard about it two or three weeks ago—to address you on Transportation, and besides this when I find myself confronted with so important a gathering, the greatest aggregation, if I may be permitted the expression, of tender feet ever brought together under one roof in the history of the gateway City of the West.

"I am not unmindful, Mr. Chairman and Gentlemen, of the many difficulties, dangers and tribulations that probably many of your members undertook in embarking on the long trip from the east to this land of promise and promissory notes and prohibition. I have been reliably informed, gentlemen, that many of you took the trip without water at all and others dared the perils of the trip armed only with a pocket pistol.

"Some years ago a very prominent writer visited the Canadian Northwest. I unfortunately forget what his name was, but he wrote in his book that the further west he went the more he realized the truth of that scriptural saying that the wise men came from the east. In looking over the scriptural history I can't find where these men returned to the east, but it is certainly a matter for congratulation that their illustrious successors followed the precedents set by these wise men and took the western train and set their eyes towards the western sunset and held their conventions and deliberations in this city.

The Bells of St. Boniface.

"Not so very many years ago, but early in the history of this country, the great American poet, Whittier, visited these glimpses of the moon, visited the Roman mission over in St. Boniface; looked over the scene that was spread before him and recorded his impressions in that beautiful imagery of his verse. I daresay you are all acquainted with his poem, but there was one particular verse that has always lingered in my memory since the days of the third reader, and that was when he described the Bells of St. Boniface:

To the bells of the Roman mission they call from their towers twain,
To the boatman on the river and the hunter on the plain.

"And it needs no great stretch of the imagination tonight, gentlemen, to see something of the scene laid before the poet when he wrote those lines—the river winding its serpentine way along the valley; the song of the meadow lark greeting his ears; the smell of the wild flower and sweet clover; the chimes of the bells ringing through the valley; the boatman on the river laying aside his paddle to make the sacred gesture of our common salvation; the hunter and Indian on the trail passing with bowed head at the sound of Ave Maria. These were the elysian fields, this was the peaceful scene upon which this city was founded prior to the discovery of Winnipeg by Tom Deacon and Lem Barrett. Those chimes still ring out but over what a changed scene—over the glowing of a great city with its factory chimneys belching out their smoke to the azure sky, and over the noise of the hammer and the forge, but, as you go north following the windings of the river and as you get away out, you can still hear the chimes on a still evening away down at St. Andrews Locks, one of the greatest monuments we have in Manitoba, equalled only by the Panama Canal and surpassing it in one respect that it took a great deal longer to build.

The Vesper Chimes.

"Sometimes on a summer's evening it is the habit of our citizens to take out the family dog and children along Broadway and hear the chimes, the vesper chimes of the evening, calling to prayer as they survey the uncompleted parliament buildings, and sometimes the sweet notes of the chimes are drowned, drowned by the roar of the national transcontinental trains as they cross the Red River bridge, and the citizen strolls home in the gloaming of the evening and he thinks of government efficiency, government ownership, Laurier's monument of the transcontinental, the world, the flesh and the devil generally.

"Then there are other chimes; there is the still Sabbath morn, those lovely summers so peculiar to this northern prairie land where the clang of commerce is still and all the noise of business life is still and it is a perfect day, and you can hear the chimes away west as far as St. Charles, when without worldly thoughts of rebates, railway rates, conscription of wealth or other railway matters you stand upon the field with your eye more or less on the ball.

"Gentlemen, I feel very proud and very happy at being given the privilege of addressing a few remarks to you this

evening; I don't know of an Association that wants them more. I feel, as we used to say in our little eastern gatherings, when I lived away east, it is good to be here, good to look around the table and see old friends from the east, old companions who helped me while away many a railway trip. I have always been an admirer of the Canadian manufacturer. I have admired his persistency and his industry. I have admired what he has accomplished in providing employment for our people and opportunities for our people in our own country. I have admired him for what he has surmounted and, sir, my tears have flown with his grievances, especially so when the forensic eloquence of my friends, Messrs, Welsh and Carpenter, ring out through the corridors of the Board of Railway Commissioners at Ottawa. My tears would have mingled with theirs, but I knew what kind of characters they were; and to-night when I look around at the many representatives of the manufacturing institutions with whom I have done business for a great many years, when I look at my old friend, Mr. Harry Wright, the manufacturer of door catches in Hamilton, I feel like repeating that proverb I repeated to him in the days of his youth, some 30 or 40 years ago, and on a similar occasion, that I must admit an honest manufacturer is the noblest work of God."

The President: "My friend, Mr. Lannigan, reminds me of a Scotch minister. He was going to preach for a neighbor of his one Sunday morning, and he arrived at the church rather late and somewhat flustered. The good old Scotch sexton with his usual hospitality said, 'Meenister, I see that you are a bit flustered, would you no have a drap before you go into the pulpit?' 'Oh,' he said, 'nae, nae, I could'na do that, I could'na do it for three reasons. In the first place I am a teetotaler, in the second place I am to preach a temperance sermon, and in the third place I've just had a wee drap.' Now then I am a Parson and sometimes the Parsons get stuck in the application of their sermons. However, let me apply it in this way—in the first place Mr. Lannigan is a railway man, in the next place he preaches railway sermons, and in the third place he has had more than a wee drap of railway experience."

It was at this stage of the proceedings that Mr. Parsons delivered his inaugural address. The address, which was generally regarded as one of the most inspiring ever delivered before the Association, is featured on another page of this issue.

Mr. Crerar's Speech.

In introducing Mr. Crerar, the last speaker of the evening, the chairman remarked, "I am sure we will all be delighted to listen to Mr. Crerar, the President of the Grain Growers. I could wish that representatives of agriculture, of really the greatest industry we have in Canada, should visit now and again the lesser industries of the country. We are all one, we should feel that as producers together we have interests in common, and so far as the manufacturers are concerned I am sure we desire to find a common meeting ground; we desire above all things to be Canadians and to feel that the development of this great country interests us more than anything else."

"Mr. Chairman, Ladies and Gentlemen," said Mr. Crerar, "let me at once thank you, Mr. Chairman, for the very kind manner indeed in which you have introduced me to this audience this evening, and let me say also with complete candor and sincerity that I esteem it a privilege indeed to have the opportunity of addressing the Canadian manufacturers, and perhaps in my poor way to represent the farmers of this country before your splendid Association.

"I need not blink the fact in stating, that the farmers of Western Canada and the Canadian manufacturers have not always been able to see eye to eye on some questions, nevertheless I heartily echo and heartily applaud the sentiment expressed by you, Mr. Chairman, when you stated particularly at this time in the history of our country all divergent interests should endeavor to get together.

An After-Dinner Story.

"Being the first occasion on which I have had the privilege of addressing your Association I perhaps feel somewhat like the southern darkey who had moved up to New York and was desiring to become affiliated with a congregation in that city. He had been a very pious darkey in his little town in the south and he had heard, he had learned of the reputation of a great New York preacher, and, of course, when he came to New York he thought he would like to be identified with that preacher's church. He attended it for several Sabbaths, listened to the sermons, was delighted with them, and then sought the preacher to make known his wish or desire to have his membership from his little church in the south transferred to the fashionable New York church.

"It was rather a problem for the parson. His church was rather an exclusive one, and he was somewhat at a loss to know just how this humble darkey might be received in his church, and he sought to convey in a very tactful way to the negro the suggestion that it might be wise for him to identify himself with some other church, that he might be completely at home in his environment. The darkey, however, was quite convinced that that was the church he desired to join. After discussing the matter the parson said to him, Now I would suggest that you go home and pray over the matter, it is a very serious step you are taking on coming into this city, and you don't want to make any mistake; I would suggest you go home and lay the whole matter before the Lord and ask His guidance in it. The darkey did so. He had commenced, however, to tumble, to use a common expression we have in the west, to the situation, and whether or not he laid the matter before the Lord, at any rate a few days after he met the parson and the question came up again, and the minister said to him, Well now, about that matter of your joining our church, have you been thinking about it? Oh yes, I have done sure been thinking about it. Well, have you laid the matter before the Lord? Yes sir, I done laid the whole matter before the Lord. And did you get guidance? Yes, I sure got guidance. The good Lord told me not to worry over the matter, He said He had been trying to get into this church for 20 years and hadn't been able to do it yet.

"I am not quite in that position. I have, I will say quite frankly, frequently thought that it would be an excellent thing if our farmers' organizations and your Manufacturers' Association could get a little closer together. I belong to that type of individual, and I can say quite truthfully I think that a great number of our farmers share the same idea with me. I belong to the type of individuals that believe there can be honest differences of opinion, and if you have honest differences of opinion honest men can have no objection to discussing those differences frankly and fully.

The Greatness of Agriculture.

"You have asked me to-night to speak, and you have associated my name with the subject of agriculture. Agriculture, as you have said Mr. Chairman, is, I think, one of the great industries of the Dominion. After all we get down to rock bottom in the consideration of these questions and we learn or we come to the conclusion that all wealth in its original form comes from the earth. It has to be dug out of old mother earth in some form or other and that is nowhere

more manifest than when, for instance, we have a crop failure, as we had three years ago in Western Canada to a large extent, and we see the result in the paralyzing of business, in the closing of factories, in the reduced volume of business done by the wholesale men and a reduced volume of business done by the transportation companies; and, therefore, particularly in a young country like Canada that is essentially an agricultural country, the subject of agriculture and the development of agriculture along sound lines should be a question of close interest to every good citizen.

The Prosperous Farmers.

"Now, our farmers in Western Canada at the present time are prosperous over the greater part of the country. I think it is the finest testimony we can have of the splendid richness of our country, to its wonderful resources and its fertility that two years ago, three years ago, in the Province of Aberta, in the western part of these prairies provinces, that the newer settlers who had come into this country to make their home were in a very serious condition, so serious a situation that the Dominion Government had to come to their relief to the extent of 12 or 14 million dollars, and that to-day, after two years of bountiful crops and the high prices prevailing, those same men have been able to liquidate their liabilities very largely and are now on a fair way to prosperity.

"The last two years have been profitable; Providence has blest us with bountiful crops. The farmers, of course, reap the advantage of the extraordinarily high prices going, and to that extent they have prospered and are in good financial position. However, it is scarcely wise to judge the future of agriculture by the past two years, and I would like briefly—and I want to be as brief as possible because I recognize you gentlemen have had several strenuous sessions in your business meetings, and I would be discourteous, Mr. Chairman, and unfair were I to attempt to take up your time to-night by any lengthy discussion, but there are one or two observations I should like to make, and I desire to speak quite frankly as I believe you desire to have me speak.

"The problem of the farmer in Western Canada is different in large degrees from the problem of the farmer in Eastern Canada. There you have your large industries, you have them located in your towns. The advantage of a manufacturing industry to a country is that it creates a home market. Now while I am, if I may make so bold as to say so, a believer in freedom of trade, nevertheless I recognize a home market is of very great advantage to the farmer the same as to any other individual, and the farmers in Ontario are in a different position in that respect to the farmers of Western Canada. You have there your manufacturing industries; you have your farmers who feed all their grain on their farm, who raise their poultry and dairy produce and their hogs and cattle, and find to a very considerable degree a profitable market for it at home. When you come to the west of the Great Lakes you are faced with a different situation. The great staple products of these three prairie provinces are what? Grain and live stock. I am speaking from the agricultural point of view. Now, we have produced in this country within the past year, and you will bear in mind there was a very considerable portion of crop failure through rust—we have produced 225 million bushels of wheat. The year before, which was an exceptional year, we produced almost 400 million bushels of wheat and we have scarcely scratched the cultivatable land in these three provinces. Putting it at a very conservative estimate we have not yet tilled one-fifth of the land that is fit for production of grain, and it is no stretch of the imagination to conceive with the population in this country we could very readily in these provinces of Manitoba, Saskatchewan and Alberta, produce a billion bushels of wheat a year.

"Not only can they produce a billion bushels but they can produce in very large degree live stock. The northern portions of these provinces are eminently adapted for the production of live stock of all kinds, good water, fine pasture, a vigorous winter it is true, but nevertheless abundance of feed; and we have gone beyond the experimental stage in that respect, and we know we can do this. Now when the farmer who is producing this stuff looks around, the first question that naturally occurs to him is, where am I to market? The farmers in Ontario can very largely find a market right at home for what they have produced, but the farmer of Western Canada has got to go outside of the confines of Canada to find a market for what he produces. The total population of Canada at the present time, putting it on a fair basis, will not consume more than 50 million bushels of wheat a year. We have, therefore, to find a market outside, even at our present rate of production, for over 200 million bushels a year, and therefore the question of wider markets is a vital question to the farmer of Western Canada. There is also another aspect of the question, when he sells his grain—confining our attention for a moment to that commodity—he sells it in the markets of the world in competition with the Argentine, with Russia, with India, with Australia, and with the United States. The United States owing to the tremendous advance in their population are rapidly reaching the point where they will consume practically all of the wheat that they produce, and I am quite confident that in my day and in the day of practically everyone here we will see a time when the United States will be an importer of wheat.

"Now, when we go into the markets of the world we have to come into competition with these countries. Let us look to the future, because I think it is the part of wisdom at the present time to look to the future. Personally I think that Russia in the future is going to be the great competitor in the markets of the world in the sale of our grain. If you glance at that immense country for a moment, with a population of 170 millions of people, a tremendous area of fertile country splendidly adapted to the production of grain, and owing to the reactionary government under which they have lived they have not had the opportunity to develop their country, they have lacked transportation, there has been no education, but if as we all hope will transpire, the old reactionary government is followed by a progressive democratic government in Russia, and we all hope for that, we are looking for it and many of us are praying for it, what is going to be the result? The Russian is essentially an agriculturist. Russia is not a manufacturing country as you know. When I contemplate the application of that tremendous labor force to that tremendous area of fertile land, when I see thousands of miles of railway built in Russia in the next ten or fifteen years, as will undoubtedly be built, when I see that country next door to the consuming countries of Europe, I commence to wonder what is to be the future of our agricultural industry in Western Canada. I am not a pessimist, I hope I am not, but nevertheless I see a situation that we desire to take cognizance of. How are we to meet that situation?

Cheap Land and Equipment.

"There are two elements necessary to the successful production of grain. You have got to have cheap land and as cheap an equipment as possible in production. I am not discussing this question and I am not asking you to accept my view upon it, I am merely pointing out what, in my opinion, is the very important consideration in this matter,

and let me say in all seriousness that is why the farmer of Western Canada desires to purchase in the cheapest market he can the equipment that is necessary in the production of his grain. I will leave that thought with you. The farmers are honest in their view. I know, perhaps, we have been extreme at times in our presentation of it, nevertheless it is the honest view and it is one that should receive serious consideration. If we produce in this western country a billion bushels of wheat a year there is not one of you gentlemen manufacturing in Eastern or Western Canada but is going to benefit by it. We can treble or quadruple our production of live stock, we can get the best prices we can for it, the people are going to purchase it.

A Galician and His Auto.

"Speaking to a friend the other day he gave an instance of a Galician who had settled in the western portion of Manitoba a few years ago. That fellow came in the other day to buy an automobile. They went through the shop where automobiles were exposed for sale, and there was a particularly fine one, I believe a machine that cost $1,700. They looked over the cheaper cars, and he said to the dealer, I will take this one. The dealer was amazed. He said, That costs $1,700, you are prepared to give your notes for it? No, he said, I will pay cash for it; and he dug down and paid cash for the automobile. If he is paying cash for it he is going to pay his taxes and build better houses and wear better clothing, he is going to raise his standard of living, and as he does that he is naturally going to require practically all of those articles that enter into manufacture.

"While our grain growers' organizations are very much alive to that question, that is not the only question we have in our minds. I think I am not going beyond the mark when I say that our grain growers' organizations and our farmers have been broadened in their outlook and viewpoint. I can illustrate that in this way, and perhaps in as practical a way as could be done. I see some of my friends of the Winnipeg Grain Exchange here to-night and they will recall as I recall eight or ten years ago when there was a very bitter feeling existing between the organized grain trade in Canada and the agricultural interests. There was a great deal of unfairness and a great many unfair things said by the farmers at that time of the organized grain trade, but we got into business, we studied it and saw some of the difficulties, saw where we were astray, and the result is no less than three days ago the organized farmers and organized grain trade got together to make a joint recommendation to the Board of Grain Commissioners as to what was the best thing to do in the marketing of our grain. That to my mind is a happy augury, and I will very frankly say that is the way I feel it should be.

"However, some of the other problems we have under consideration are the educational side of our work. I recognize that many of our leading farmers recognize that there are to-day a great many inefficient farmers, and we want to make them efficient. The old day has gone by, gone I think forever, when the main qualification for a farmer was lots of brawn and muscle. Farming to-day is a specialized industry calling for as fine an application of powers in many respects as your manufacturing industry, and we are wanting to bring that thought and the consciousness of it home to our farmers and it is part of the plan of the organized farmers of this country to do that. We believe those of us who are more progressive are the best means and the best agents for bringing that knowledge into the mind and into the practice and into the work of our fellow grain-growers.

"But, aside from that we recognize another duty. We have in these three western provinces a very diverse population. We have gathered them in. A few years ago we gathered them in from the countries of Europe. We have had many citizens come from the United States, and let me tell you, gentlemen from the east, we have no better type of citizen in Western Canada to-day than the American farmer. I know whereof I speak in that respect. There is no finer type of citizen. He speaks our language, he is of Anglo-Saxon descent, he is familiar with our history and literature to a certain extent and familiar with our ideas, but it is different with this part of our population whom we have brought to Canada from Central and Southern Europe. Now, those people in many respects will make splendid citizens. I gave you an illustration a little while ago of the Galician who bought the automobile. When those settlers came first to Canada some 18 or 20 years ago they settled in a portion of the country where I was then farming. I know the conditions under which they labored; I know they had nothing when they came to the country. They went into a part of the country where the ordinary white man as we called him at that time, forgetting for the moment these people were white, couldn't make a living; they cleared the land, drained it, got their stock and to-day they are among our most prosperous farmers, and the younger generation of those people is learning to speak the English language, and I believe they are anxious to have their children educated. I want to say here I have no sympathy whatever with any attempts that are made to inflame passion or prejudice against those people to-day. I say that in all seriousness. There isn't any question they have taken advantage of the situation which exists to a certain extent in selling their labor to get the highest price they can for it. They have done just what the great majority of people do under such circumstances, but we want to imbue those people with our ideals of Canadian citizenship; we want to make them good Canadians. We need them, we want our country developed, and I believe it can be done. They left a country at home where they were under the heel of tyranny, and we have not done all we might have done in the past towards imbuing them with our Canadian ideas. I want to say the same of both of our political parties, that in the past they have too often given them to understand that their franchise, the most valuable thing a man can have, was a merchantable commodity which they could realize on the same as on a bushel of grain. That is wrong, and perhaps a little self cross-examination would not be amiss on our part, because I don't know that we have done all we might have done in the past to fill them with Canadian ideals and give them an idea of what our standard of citizenship should be.

A Tremendous Burden.

"I have taken up some time and I don't wish to trespass any longer. The situation of Canada to-day is one that should give every patriotic citizen some concern. Prior to the war our national expenditure ran somewhere around 130 to 135 millions of dollars. As a result of the war and other things our national burdens are going to be tremendously increased. Our pensions and the interest on our debt and all the other obligations will probably mean that we will require to have a national income after this unhappy war is ended of from 275 to 300 million dollars a year. It is a tremendous burden to impose on a population of eight million people. We don't regret it—we don't regret our entry into the war for a moment, but we have this task ahead of us. To-day we have sent the flower of our country, men who have gone voluntarily to the battlefields of Europe, and why? To fight for the great principle of human liberty. The whole meaning and purpose of democracy, democracy itself

was in the balance in this war. We have sent the very best of our young manhood to fight for it; many of them will not be back, many of them will come back bruised and broken, and the obligation rests on those of us who stay at home to see they never want for anything as long as they live. It is the very least we can do for them, but, there is something further. They fought for freedom. It rests on every patriotic citizen in Canada to-day, whether he is a farmer or manufacturer, an artisan or professional man, to set his thoughts seriously to the question of making Canada the best country in the world in which to live. That is the high duty that lies ahead of us. We have got to sink those petty cavilling partisan differences we have had in the past. We have got to realize we are not partisans, we have got to try and link together race and creed in the broad spirit of Canadianism. How can that be done? It can only be done if every patriotic citizen realizes his duty and sets his mind and his heart to that high purpose."

Justice to Manufacturers.

THE PRESIDENT: "I am sure we have been greatly delighted in listening to Mr. Crerar's magnificent address. There isn't anything it seems to me that will help us get together so well as addresses such as we have heard here to-night. First of all we had the thought of getting together from His Honor the Lieutenant-Governor, and now we have had it again set before us by Mr. Crerar, and I am sure that it strikes a responsive chord in the heart of every manufacturer here present who realizes that the diverse elements in our population are beginning to think that we can so get together that we shall weld out of all these diverse elements a magnificent, a strong and virile population.

"We shall as manufacturers in the east always be delighted to see you, sir, if you will come and talk to us as you have talked to us to-night or in any way that you see fit. We would like you and other representatives of agriculture in the west to come and visit the manufacturing establishments in the east to see our problems. We desire that you shall see ours and we desire that we shall see yours and only in this way we believe we can get together. It seems to me when we have heard, as we have from you to-night, that the farmers of the west are so prosperous, we are delighted with it and we will look forward to this fact that for several years to come at all events prices must rule high, and the grain-growers of the west we think are going to reap a magnificent harvest in the next few years that are ahead of them whether the war ends or not.

"With us as manufacturers in the east I am sorry to say the outlook is not so bright because the moment the war is ended we are going to have problems to face which we believe we shall face only with the greatest difficulty, with patience, with perseverance and with the ability which perhaps has been engendered in us by these few years when we have had higher ideals of life and service than we have had before. We all rejoice with you in your prosperity, and while perhaps we cannot look forward to it just as confidently as you can, we nevertheless shall have nothing but the kindest thoughts of you in the abounding prosperity which we feel sure will come to you.

"Speaking of the manufacturers of the east, we, too, of course, are prosperous at the present time. We are prosperous to some extent on account of the war and munition-making, though, gentlemen, we know shortly what this will mean, and I may say further that we are perhaps not as prosperous as we are given credit for. There are always some people who seem to think that manufacturers must be making a tremendous amount of money whether they are or not.

"Now, I was in a church here on Sunday night last and I heard the preacher of the evening make this statement. He said: It is current that a certain manufacturer, who is looked upon as a Cabinet possibility in the Dominion House, made $800,000 last year out of making war ammunition. He said, It is a shame that such should be the case. Such a man has no right to be thought of in connection with a Government office and a Minister of the Crown. Now, that statement was applauded very heartily, as I don't wonder at it. After the service I went up and shook hands with him and I said to him I was pleased with a good deal he said and I was interested in all he said, and I said, I would be glad if you would give me the name of that manufacturer who made $800,000 last year out of munitions and who was looked upon as a Cabinet possibility in the Dominion House. Well, he said, you noticed I didn't mention the name. Yes, I said, I noticed that, but surely you wouldn't mention the case and make a statement of that kind unless you were prepared with the name. Well, he said, I purposely withheld the name because I have not been able to check up the matter, and I am not positive it is the case. I said, now, that surely is a thing that is hard to understand how a minister of the gospel would make a statement of that sort without having verified the statement, which he had heard, and I said, as a member of the Canadian Manufacturers Association, meeting in annual session in Winnipeg, these matters of course will come before us. I would be exceedingly obliged if you would give me in confidence the name. After some moments of hesitation he gave me the name and asked that I keep it in confidence, which of course I will do.

"However, I may say this, that steps were taken to find out from that party, who is a well-known politician in Canada, as to whether he made this $800,000 or not, and I have a telegraphic reply here which states 'It is wholly without foundation.'

"Now, gentlemen, it is a pity that statements of that kind go about. It is a great pity. I can understand that perhaps some poor woman in that church would go away feeling, My boy is at the front, I have hard enough work to get along while he is there, I am thinking of him and the risks he takes and how he may come home maimed for life, if he comes home at all, and this man, this politician who may be a cabinet minister, is making $800,000 out of the situation. That is the way in which people become dissatisfied oftentimes, and that is the way to lead people into socialism. I believe in the advantage of a certain kind of socialism, we are all socialists more or less I suppose, but there is a socialism that none of us believe in because of it leading eventually to anarchy.

A Plea for Fairness.

"When a minister of the gospel stands up and makes such a statement as that what are we to think of it? We admit in a few cases that certain large profits have been made. However, those of us who have been in conference and know of our deliberations there, realize in how few cases this is actually a fact and know what we are confronted with in the way of scrapping machinery and all that sort of thing, so that the so-called paper profits do not always materialize. I remember an old Dutchman who was speaking with another party and this other party who was his partner was telling him of how much money they had made, and he says, Yes, Henry, that is all right, you tell me about all the money I make, but I haven't got it in my

pocket. There is a good deal perhaps like that with the manufacturers who are said to be making so much money.

"However, in a general way, we realize that the manufacturers are prospering and we are glad of it, just as we are glad that our friends the grain producers of the west are making money. I hope, sir, that you will have more manufacturing industries here in the west. I am glad to say to you that the prairie provinces branch of the C.M.A. have an increase in membership during the past year of over 200, and that will make clear to you how manufacturing industries are growing in this country. I feel we will all do better when we have larger interests both in grain-growing and in what is called ordinary manufacturing in this country.

Farewell to Winnipeg.

"Now, gentlemen, I think we have come to the close of what I am sure you will all agree has been a very happy occasion, and I may say again on behalf of the manufacturers of the east that we cannot tell you with what a happy feeling we close our annual meeting in Winnipeg. We have been delighted. We have been delighted with the spirit that has prevailed in our annual meeting. We have been delighted to meet the friends of the west, manufacturers and others here, and in the spirit that we have present in this meeting—the spirit of getting together, the feeling that we have got the grandest heritage on earth in this Canada of ours. Let us be big, strong Canadians that will do our work and feel that we are going to take our part in making this Canada just what we know it ought to be and what we can make it under the blessing of God if we will take our part and do our work."

The banquet was closed with the singing of the National Anthem.

SAVING BOYS FOR INDUSTRY

A Valuable Activity of the Winnipeg Branch of the Association, as Explained at the Annual Meeting.

By W. J. BULMAN,
Bulman Bros., Limited, Winnipeg.

I have been asked to tell you of an activity of the local branch that has resulted we think in a very great deal of good and in some considerable service to our members. It is not my intention to make an address as we are falling behind in the schedule and time must not be taken up, but I will briefly tell you of this activity and leave you to apply it if you wish to your own branches and activities in the east.

The matter was brought to our attention by the judges in the Juvenile Court here. They visited some of us and explained that the boys, many of them, leaving school drifted first into newspaper selling on the streets and into the messenger service of the town and in those services soon developed the ability to earn so much money it was difficult to switch them out of those services into occupations that lead them to some definite avenue for earning a living. They took us and showed us numbers of places in the City—some 30 or 40,—where the boy selling newspapers on the street was able to earn $30 a week. They pointed out to us the difficulty of moving that boy into learning a trade where they started possibly at $5, $6, or $7 a week, and these boys when they grow up then become the pool sharks, poolroom loafers and barber shop loafers and develop into a very objectionable class that ultimately came under the purview of the Juvenile Court. They said if their officers could find avenues of employment for those boys they thought they could switch out of that employment many a boy before he got to the earning of such large amounts of money, and they wanted our assistance in obtaining employment for that class of boy.

That resulted in the secretary of the local branch having a meeting of the high school principals, the juvenile court officers and a number of the members of the branch. At that meeting we found that many of the school principals found there were many parents who didn't know the industrial situation of the city; didn't know how to introduce their children into industry and they drifted aside to what they could earn. The four high school men found it would be of great advantage to them if there was an avenue that they could send a boy to, whose parents didn't completely understand the situation—could send that boy to the heads of industries here who would find out from that boy what he was best adapted to and introduce him to it and get him started to work, and the secretary assumed the responsibility of distributing these boys to the employers and getting the employers to agree to receive these boys and introduce them to business.

We got the Industrial Bureau, another organization here, to look after the wholesale houses and mercantile establishments that were not members of the branch and started to work. The result has been we have started a flow of boys from the public schools and high schools to industry through our branch secretary. That move has served two purposes. One was that it enabled the members of the branch to have a centre where they could ask for boys and apprentices and so forth for the purpose of introducing the boy to a business, and the men locally have taken an interest in these boys, speaking to them and finding out their capabilities and desires and starting them in the course that most appealed to them. It has also resulted in the taking of a number of boys off the street, because these involved the Juvenile Court boys. The Courts see a great deal of value to them in it, in that it enhanced their effort, and our members found a tremendous lot of value in it, in that it introduced apprentices to them.



Getting Wisdom from the Experts

Messrs. F. J. Sleght, Toronto, and H. G. Wright, Hamilton (on the left), in consultation with J. R. K. Bristol, manager Tariff Department, and J. E. Walsh, manager Transportation Department (on the right):

THE DEBATE ON THE RAILWAY SITUATION

A Full Report of the Discussion Which Took Place Following the Introduction of the Resolution on Equipment and Supervision

AS probably the most important business considered at the annual meeting of the Canadian Manufacturers Association in Winnipeg, it has been deemed advisable to present a fairly complete report of the debate on the railway question.

The President: "I think after reading the resolution we could very well ask our traffic expert, who is more familiar with railway matters than any one of us could possibly be, to give us his views, and I understand the thought of the members of the Association to be that we should discuss the entire railway situation fully and completely. Two years ago at our meeting in Toronto you remember we passed a resolution asking the Government to appoint a commission to look into the railway situation and make a report. Afterwards a delegation of the Association waited upon the Premier and presented that resolution and he stated that he had been thinking along similar lines himself and that he would give effect to them, which he has done. Now the Commission has reported. Unfortunately it was not unanimous in its report, so that we have two reports before us,—a majority report joined in by Sir Henry Drayton and Mr. Ackworth of London, England and then a minority report, which was worked out by Mr. Smith of New York, President of the New York Central, the other member of the Committee. As you know the majority report calls for what you might call a limited scheme of nationalization of the railways; the minority report is against that. I presume in our discussion we will feel free to consider the whole question. If we desire to speak on the nationalization of the railways well and good. You will observe, however, that the Committee's resolution does not deal with this question, that is, the exact question of nationalization; it rather asks you to consider what might be called temporary emergency measures."

Mr. Walsh's Explanation.

Mr. Walsh: "Mr. President and Gentlemen: This is a pretty large undertaking or rather a large subject to speak to and it is difficult to determine where to commence, but I think, in order to appreciate the position we are in to-day, it is necessary for a moment at least to consider carefully and seriously the conditions which have brought us into the present position. As everybody knows it was early declared to be the proper policy of this country to develop our transportation. Our natural resources were far away from the markets. We absolutely didn't have any, because they didn't represent any value. In the early days, in fact I think in the time of the Mackenzie Government, there was talk of the building of a transcontinental line. Part of the construction was then undertaken by that Government; it was afterwards to some extent undertaken by the Government that succeeded and finally it was decided to turn it over to a private Corporation, and to-day we have the Canadian Pacific Railway. Assistance has been given to the C.P.R. to the extent of $228,000,000 according to the Royal Commission Report. They carry land values to the extent of $119,000,000 plus in their books. I think everybody will agree that those values were made by the Canadian Pacific Railway; it was because of the construction of that road and because of the knowledge and foresight of the management that this property was made valuable, and I don't think anyone will dispute the policy then adopted in respect to transportation. I am simply saying that as a starter.

"That policy has been pursued all through up to the present time. We have undertaken a great deal in the way of obligations. In fact the Grand Trunk Pacific Railway was built practically as the result of two or three elections. The people of this country endorsed the construction of that railway; they guaranteed the bonds; they made it possible to go on with the construction; and the same applies to the Canadian Northern Railway. Those obligations still stand; they are outstanding; both Provincial and Federal Governments have endorsed these notes and there is an obligation to see that they are carried through. Unfortunately it may be that our Government lacked foresight, but we find ourselves in the position to-day that we have got to meet these obligations.

"Now your Transportation Committee made an investigation of this during the years 1913, 1914 and 1915. Their attention had been directed repeatedly to the fact that there were pilgrimages being made to Ottawa with the purpose of getting more money. Applications were being made to Parliament for charters extending lines in various directions. They believed there was more or less traffic in these charters. Their attention was specially called to the fact that during that session of 1915 there were applications for something like 52 extensions of charters in various parts of the country. It was the opinion of our Association that we should take some action or rather take stock to find out where we stood. That resulted in a resolution which was adopted at the Toronto meeting and which has led up to this investigation and to this resolution which is before you to-day. With your permission I would like to refer to that resolution, be-

RESOLUTION RE CANADA'S RAILWAY POLICY

(As presented by the Committee on Resolutions.)

WHEREAS the Royal Commission appointed to enquire into Railway and Transportation has found that the policy of assisting private railway companies with favorable legislation, subsidies, and extension of credit —with a view to the development of our resources, and upon which the moneys invested in the properties have largely been borrowed prior to the commencement of the undertaking, has resulted—owing to the lack of proper supervision—in unnecessary duplication of lines in territories previously served, thus leading to unprofitable working conditions;

AND WHEREAS the Commission has found that such roads must be maintained to a great extent through large advances of public money represented by guarantees of the Dominion and Provincial Governments, the ordinary stocks of these railways representing practically no cash investments or value;

AND WHEREAS both reports of the Royal Commission have declared that further large expenditures are absolutely essential to complete these lines and for betterments and equipment;

BE IT RESOLVED that this Association urge upon the Government as a matter of present national necessity:

(1) That immediate steps be taken to assist in overcoming the desperate need for equipment, which at present exists, by providing an ample supply of cars and locomotives and turning them over to the companies under lease or contract of purchase;

(2) That a Board of Trustees be appointed to receive all moneys of the companies unable to meet their obligations and to determine and supervise all expenditures of the railways to whom advances might have to be made.

cause I think it will be found by anyone who has read both reports of the Royal Commission, the majority and minority reports, that the views there expressed have been to a very large extent embodied in these reports.

"That resolution, as the President has stated, was presented to the Premier shortly afterwards and he stated he was fully in accord with it; he was in sympathy with it; he had felt for some years past that such an investigation should be made in order to determine where we stood. That investigation has been made and, as the President has stated, there is no necessity for repeating it. Unfortunately the Commission were not able to agree upon their findings. It is, however, agreed that there should be immediate relief, that there is an absolute necessity for the things as stated in this resolution. It was also found, and they are most emphatic I think and outspoken in the statement, that if any reorganization is made it should be along the line, speaking now of the majority report, that there should be a Board of Trustees appointed to manage these problems. They are opposed to Government management. I have nothing to say in regard to that; that is a matter for the members of the Manufacturers Association and not for the paid officials to discuss, but both reports agree that trustees should be appointed to further carry on this investigation. It has been stated that the Royal Commission should continue its work. It is my understanding that this Commission has been disbanded. It has performed its duty as laid down in the Order-in-Council. In other words it was appointed for the purpose of investigating the conditions and giving to the Government a report upon them. If that is correct it seems to me in suggesting a Board of Trustees we are simply carrying out the ideas stated in these reports.

"The Transporatation Committee held several meetings, at which a number of different resolutions were submitted and they came to the conclusion that this was the only recommendation they could make to the convention. I might say that we had over three hours' discussion last night in the Resolutions Committee on the same subject, and the original resolution was modified to a considerable extent. I believe it was felt that this could properly go to the Government as a constructive measure.

"The enlargement of equipment is imperative. The United States Government within the last few days has undertaken an expenditure of $100,000,000 for equipment for the purpose of serving that end. Fortunately the west didn't suffer, comparatively speaking, last winter or the winter before--they suffered considerably the winter before but they didn't suffer last year as compared to the east, and I can't see that there is going to be any improvement, and as a matter of fact the way conditions look to-day, unless immediate steps are taken, we will be in a worse position.

"There are gentlemen in this room from the east here who could tell you, if they wished, what it has cost them to handle their traffic last winter. I was talking to a member of ours the other day in the office, the president of a company who had devoted his entire time last winter to tracing his own cars from Chicago to Toronto, and he said that it cost him on an average for every car brought into his plant last winter $25 for expense in tracing those cars. That gives you some idea of what we have been up against and some idea of the enormous loss sustained through lack of proper equipment.

"There is another reason in support of a Board of Trustees and that is the position of the Grand Trunk Railway. The G.T.R., for reasons best known to the Board of Directors, have during the past ten years paid out in dividends according to this report $36,000,000. Last year they paid $4,000,000, or in fact practically all their net revenue went out in that way. The result has been that there is an absolute lack of proper equipment to take care of the traffic offering from the eastern part of the country. The president of the company made it clear to the Royal Commission that that was the policy of the board of directors. He said in his examination: 'We should have at least three and perhaps four per cent. put aside every year on rolling stock. That would amount to from $2,000,000 to $2,500,000."

"Sir Henry Drayton: 'You have never done that?'

"We have never done that. I have had it before the Board and have practically insisted upon it being done whenever we get any new rolling stock. I bought about 10,000 cars the first year I was here. They were all charged to capital account. We should have had a reserve fund for taking care of them. We now have to go and do the same thing over again.

"As a matter of fact by an examination of their annual report you find, as I stated before, that all that net revenue was paid out in dividends. I am not questioning that phase at all. I presume the shareholders are entitled to them, but it shows this that they are the first consideration. The people of Canada have not been considered in the way of service, and it seems to me, Sir, that is another reason why there should be a board of trustees or some responsible body appointed to carry on this work and determine what would be the best course to pursue.

"Now with regard to the Canadian Northern and Grand Trunk Pacific Railways, as I stated before, we have undertaken certain obligations. The people of Canada entered into contracts with the promoters of these enterprises. They didn't raise one dollar until these guarantees were given them. They couldn't get the money. Those guarantees are still outstanding. The Federal ad British Columbia Governments have undertaken to pay, so far as the Canadian Northern is concerned, $5,414,507, under certain agreements. These roads have defaulted; they lacked foresight; they were too optimistic; they haven't got the traffic. They foresaw that to some extent when they made these agreements. The question seems to me to be, are we going to carry out our portion of the contracts? If we are, how are we going to do it? Are we going to supervise these further expenditures? And that is the justification for that second clause in the resolution."

Mr. Deacon: "There is before the meeting a definite motion. A great deal of this which has been brought before us is a matter of history that I presume most members of the Association are familiar with. There is a definite resolution here regarding urging the Government to build equipment and to adopt the policy specified herein. I think the most of us understand the situation in Canada at the present time, that the Government are no more endowed with creative power than anybody else who has the money to pay for equipment. I think we should hear from some of the members of the Association who are in a position to give us information, definite information, as to whether such an equipment is available at any reasonable cost. I should think Colonel Cantley could give us valuable information on that point, and that information we should have before we vote on this resolution."

Colonel Cantley: "Mr. President and gentlemen: The situation so far as the car supply of Canada is practically this: About two years ago, or probably six months after the outbreak of the war, foreign Governments came across to this continent seeking very large additions to their rolling stock. I refer to the Russian Government and the French Govern-

ment. American companies and Canadian companies were both asked to supply rolling stock and to do it quickly. In this country and in the United States some 15,000 or 20,000 cars were contracted for. Some of the Canadian car builders approached the Minister of Railways at that time and told him what the situation was; that they were asked to tender on Russian business and French business, a matter that was entirely unknown to them. The cars are of a totally different type from our own, and it meant a radical departure from all our previous experience, and there was the question of transportation in one case, in the case of Russia, practically half way round the world, and then reassembling those cars there. These were all problems which were absolutely new to the car-building people of Canada, and the whole thing was a pretty big gamble. It turned out to be an excessively big gamble owing to the closing of the Panama Canal.

"These people went to the Minister of Railways and presented the situation and said this: The Government railways in Canada require cars, and badly; if you are prepared or will be within the next few months to place contracts for any considerable quantity of cars, we don't want to touch this business; but, if we do take it on, we want to tell you we will not be in a position to build any cars for Canadian railways until these contracts, if taken on, are disposed of, and that will occupy a very considerable time.

"His answer was, we don't want any cars, and if we did we haven't the money to pay for them. If you can get foreign business, go and get it. There was nothing else to do, the foreign business was taken. Within four months, possibly less, the Government were forced to take over that portion of the transcontinental running from Quebec to Winnipeg, and had not the cars in which to move the crop. Then they came out and tried to get a thousand or two thousand cars to be ready by the 1st of September. One company took a contract, and they were not able to supply one car by the 1st September, and it was December and January before any large proportion of them were ready. That is not to be wondered at, but that was the situation which existed at that time.

"Later the same thing occurred again. A second enquiry was put out by the foreign Governments and a second time the car builders went to the Government, and a second time they got the same answer, and a second time the same thing happened. A few cars had been ordered in the interval, some of which were delivered and some not delivered yet. During that time one company had contracted for and has delivered very largely, but not entirely, about 9,000 cars for foreign account. Another company has contracted to deliver about 5,000 cars, and another company about the same quantity. All told, on foreign account there have been contracted for, a large portion of which have been delivered, between 16,000 and 18,000 railway cars. Now, had those cars been built and running on our Canadian roads to-day the question of car shortage and transportation, so far as cars are concerned, would practically be non-existent. We would have had no very great difficulty.

"The situation in regard to locomotives is infinitely more serious than that in regard to cars. It doesn't make any difference what car supply you have, if you haven't got the motive power to move them, and roughly, the same thing occurred there. The Canadian Locomotive Company at Kingston have built two, if not three, lots of locomotives for Russia, and I think it is understood that their capacity to-day is very largely taken up with foreign business, although they are at the same time working on an order for the Canadian Government. So far as the Montreal Locomotive Works is concerned, which is much the largest we have in Canada, for two and a half years they have not built a single locomotive, the reason in the first place being that there were no locomotives to build. Neither the Government nor the railway companies were in a position, or thought they were in a position to order any locomotives. The Angus shops of the C.P.R. have been in practically the same condition, though latterly they have been doing something, but the C.P.R. found themselves three months after the war with some hundreds of locomotives stored in various yards from this city east as far as Montreal, and Quebec. At Fort William I saw at one time in the latter part of 1914, something like 150 locomotives that were housed and shedded over out of business. As conditions improved and the big crop came in next year practically all those locomotives were put into service again, and some of those were leased and rented to the Grand Trunk, some to the Intercolonial, and I think some to the Canadian Northern, and fortunately that reserve property of the C.P.R. saved to a large extent the situation and enabled the grain of the West to get through.

"My point is, if the C.P.R. had not been more foresighted than any of the other roads, we would have been in very much worse position than we are. We owe something to the C.P.R., and we are apt to forget it, and that is one of the things we do owe them; there is no question about that. They have also been very much better supplied with cars. While they have built comparatively few cars during the last few years they have built some and repaired a great many. One thing they did in 1912 and 1913, they placed orders for a very considerable number of cars in Canada, but in that year they placed orders in the United States for 12,000 cars. Now they were blamable in that to just the same extent and in the same way that the Canadian Government are blamable to-day, and blamable a year and a half ago. They should have foreseen and ordered those cars before, because in that case they would have got the cars. As it was they went outside of Canada and bought 12,000 cars, and before the last of those cars were actually delivered practically all the car shops in Canada were idle.

"Now, of course, all that is a matter of more or less ancient history. I presume the important point now is as to where cars could be got if the Government can find the money to pay for them, either for the use of the Intercolonial system, the Transcontinental system, the Canadian Northern, the Grand Trunk Pacific or the Grand Trunk itself. Unfortunately, the situation is, if the Government had the money and were prepared to place contracts as they are to-day for some, I don't think this country will get any relief of very great importance inside of six months. It will not get the relief it requires inside of at least a year if immediate action is taken, simply because the car builders are at present practically filled up with this foreign business which must be carried through. It is a war measure; the cars are wanted quite as badly in France and Russia, in fact, worse than they are here, because there it is a matter of life and death. We can get along, make various makeshifts. We will not make so much money, but that is not a factor that governs the situation so far as cars are concerned, either for Russia or, particularly, for France. Now, before that business is cleaned off so far as the Eastern Car Company is concerned, which, of course, I am familiar with—you will pardon me for referring to that, because I want to illustrate the point—it will be March before they are actually in a position to turn out any additional equipment beyond what is already contracted for, for the Government. At that time they will be ready, and recently some 3,000 cars have been contracted for for use in this country, deliveries of which end in February, but any new business that is taken on so far as that company is concerned, delivery will only begin subsequent to the 1st of March of next year.

"Items have appeared in the public press within the last two or three days which state that the Government has given an order to the Fort William shops for 2,500 cars.

As most of you are aware, those shops were never entirely completed. A portion of the machinery was installed, and after the outbreak of the war a good deal of it was taken away and used for other purposes, and the works to a large extent dismantled. The Fort William people have an equity in the property, in so far as they gave them very considerable bonuses, and land, and matters of that kind, and they have naturally been anxious to have the works reopened, and have been bringing some considerable pressure to bear at Ottawa in order to get those shops reopened. Now, there is capacity there. The difficulty, of course, will be to get material. So far as Southern pine is concerned, that is about as hard to get to-day as it is to get steel. Douglas fir can be got, but if you attempt to bring any quantity of Douglas fir across the continent to-day you are met by all the railway people, or practically all in authority who say, 'We don't want to bring Douglas fir across, try and use your native woods, or get it anywhere else.' The difficulty in getting it in the South is that it largely came up by water, and the cost of bringing it by rail means that the cost of transportation is practically three or four times what it was last winter or the year before. Last winter a considerable quantity of that material was attempted to be brought up, and in some cases the cars were on the road from southern points fully six months, and of course you can understand the disruption of business that resulted from doings of that character."

Colonel Cantley was asked by Mr. Deacon as to the relative capital cost of standard box cars at present compared with the normal cost, to which the Colonel replied that the cost was practically quite double what it was three years ago. The rapidity with which all-wood cars were going out of service was also referred to as a contributory factor.

Mr. Walsh, in reply to a question, stated that there was a more or less free interchange of cars between Canada and the United States, the National Service Board having given this understanding.

Mr. Watts asked Colonel Cantley what were the prospects for an increase in engine power, which he believed was more needed than cars. Colonel Cantley stated that the Intercolonial Railway expected to get delivery of some 15 or 20 locomotives in a short time, and that an order for 50 locomotives had been placed at Kingston. These would dribble along between October and February. He did not know the position of the other railways.

Asked as to whether shops were available for building locomotives, Colonel Cantley said the Montreal Locomotive Works would soon be through with munition work, but that they would then turn on to locomotives for Russia.

Mr. Deacon: "I would like to ask Colonel Cantley one question, if it is not a fact that a great deal of our difficulty in the production of rolling stock, and particularly motive power is due to there being no boiler-plate mill capacity in Canada?"

Colonel Cantley: "There is no plate mill capacity capable of rolling boiler plate. The only mill is one that rolls sheets up to 50 inches wide, but there is no boiler-plate mill in Canada. When we get down to the question of boiler plate and shipments we simply get to this position, the same position in which Great Britain finds itself due to taking narrow views of life and business, and not having enough faith in the country. A great many people in this country thought that to tax boiler plate was going to put a tax on all business and all industries, speaking not of manufacturers alone, but other classes. The result was, we said we couldn't make boiler plate. We could have made boiler plate just as easily as other materials we were making, just as easily as rails, and if we had insisted on the Government (meaning the whole country), if we had been wise enough to put boiler plate in the same category in the tariff as rails, we would have had to-day two at least, and perhaps three, mills in Canada; we would have had one at the Soo and one at the Dominion Steel Company, which would have been able to-day and would have turned out not only all the boiler plate, but all the steel plate we wanted or we would possibly need for shipbuilding or engine building in Canada.

"Great Britain to-day is not on the verge of starvation, but in the anxious seat on food supply, and why? Because, they said, we must have cheap food; we won't put any duty on food; we won't do anything that will help our own home growers to compete with the great plains of the Argentine or the other countries. The result was that agriculture is practically stagnant and, when the submarine menace comes, they have got to pay the price. That is the situation in this country so far as plate is concerned. The Dominion Steel Company bought and took down to Sydney fourteen years ago a plate mill capable of rolling plates 110 inches wide, which is 9 feet. That mill was never installed, but lay there until last autumn, when a man came along and bought the mill and immediately sold it, and within a few weeks it had left and gone to Pittsburg, and has been in operation for three months past rolling plate in the United States.

"Supposing the Nova Scotia Company to-day were given a mill and actually able to run it, with all the accessories in connection with it, both for motive power and for taking care of the sheets, we haven't got enough tonnage to put through that mill, because a modern plate mill to-day would roll a thousand tons of plate in a day, and that would take all the steel we were making to-day. You have got to begin at the beginning. If, instead of five per cent. duty on plates ten years ago, we had $7.50 a ton, as on rails, you would have had the plate mill and blast furnace and open-hearth furnace and all the other accessories to supply a mill."

Mr. White: "In regard to the delivery of plates, we use a considerable quantity. Twenty-five months ago we placed an order for boiler plates, and the last car came in the day I left London for Winnipeg. Last August we placed an order for delivery next December, and I had a letter a week previous to the time I left that the delivery of those plates had been extended eight months. We purchased those plates for the use of the 1918 business. Extending the delivery eight months from December puts it out of the 1918 business. If private corporations can't get plates through any of the rolling mills of the United States, including the United States Steel Corporation, I don't think the Canadian Government has much chance to get plate to build locomotives, even in the face of a recommendation of this kind from the manufacturers. It would be folly for us to recommend to the Government to do something that it is impossible for them to do. They simply couldn't get a plate to make a locomotive boiler unless they paid a premium price to a premium mill, which would be from 12 to 16 cents a pound, inside of eighteen months."

Mr. Ferguson (Woodstock): "Assuming that the car shops of the country can obtain the material to build the cars and locomotives, have we the labor in the country necessary to assemble the cars and put them on the tracks within a short time, and if not, can steps be taken to transfer suitable labor from other industries to these industries requiring the labor, so that the cars can be assembled?"

Mr. Rutherford: "Another point I would like to bring up, and that is, we all know that last winter there was no coal; we can't do anything unless we get the coal. I think if the Government could be induced in some way to help out that particular situation and help to see that there is a plentiful supply of coal in the country to move the cars when we do get them, we probably could get a good many more cars than we had last winter."

Colonel Cantley: "Of course there is a great shortage of labor, and it varies a little with different industries. In the

East the greatest difficulty so far as labor is concerned is that in regard to coal mining. A very large proportion of the total skilled coal miners of Great Britain, probably 33 per cent. of all of them, are to-day in France, and I don't know of any occupation in Canada that engages such a large number of men as coal mining. You can't make a coal miner in a year. According to the law of Nova Scotia no man is allowed to cut coal who has not had two years' previous experience. Our mines are gaseous, and a man who is not experienced may very easily, by misadventure and lack of experience, not only lose his own life, but may ignite gases which destroys the life of every man in the pit and the pit as well. We have had cases of that kind. For that reason our output of coal in the Maritime Provinces has fallen off very greatly. We have not been troubled with strikes. We have had a good many differences of opinion, and they have all been met by an increase of wages, so that we have had no actual stoppage from strikes as they have had in the West. Our men have gone on, and we have paid them, and paid them, and paid them again increases every time, but we have not got the men, so that some of the companies are not getting out quite two-thirds of what they were two years ago, and less than one-half of what the parties could produce if there were ample employees. There are some shortages in other directions, but the whole question of the supply of labor might be taken hold of by the Government with some very considerable advantage with regard to the production of certain essential things. There is a lot of unessential and unnecessary work going on in this country, some of which should be stopped, and the men engaged in that should be put in one of two places, either in the army or on work which is of importance at the present time."

Mr. Fulton thought it desirable that, in order to divert material for the construction of cars and locomotives, some control of industries should be undertaken by the Government.

Mr. Simpson thought the resolution should be qualified to read, "provided the tonnage could be supplied for these cars and locomotives." He pointed out that at present practically all the tonnage was going into munitions and agricultural implements. If, in the judgment of the Government, the building of cars and locomotives was more desirable, then it would be the duty of the Government to provide for taking away some of the munition and agricultural tonnage.

Mr. Anthes suggested co-operation between the Canadian and United States Governments, looking towards the purchase from the industrial boards in the United States of supplies drawn from the reservations being made across the line.

Mr. Simpson pointed out the inevitable shortage in the ore supply this year in consequence of the lateness of the opening of navigation and the lack of ships and men. He did not think the United States would have any surplus.

Mr. Watts considered the resolution as inadequate to meet the needs of the situation. The mere furnishing of the rolling stock was only a poultice on a running sore. He was for more radical measures. He would disregard the minority report presented by the President of the New York Central and look at the situation from the standpoint of the majority report. Personally, he believed that the proper thing for the Government to do was to adopt the measures recommended in the majority report.

Mr. Hamilton thought that, if the increase of equipment would not become effective within six months, it was hardly adequate to the case. He favored more immediate action in the way of co-ordination of service.

"I would like," said Mr. Hamilton, "to offer a modification or addition to this resolution, with a view to getting more immediate results without reference to what might need to be done later, by adding to this resolution, 'But whereas it is clear that, owing to the demands of the war on industries able to provide material with equipment necessary to strengthen the Canadian railways, it would be impossible to render practical assistance within twelve months, and that the needs of Canada during the coming year will be so great as to demand the utmost co-operative effort of all our industrial interests to meet them, be it resolved that a Board, composed of the ablest railway minds in Canada be organized to operate to the highest degree of efficiency possible that equipment with which the country is possessed, and that this Board be constituted as part of the system of greater national service which is now being inaugurated by the Federal Government, and that this Board continue its operations for at least the duration of the war.'"

The amendment was seconded by Mr. Roden, who thoroughly approved of the principle involved.

Mr. Hatch believed the railways were to blame for the serious difficulty in which they had become involved. He charged that they had held back the progress of Canada for four years. He thought that they should ask the Government to take over the roads that didn't pay.

Mr. Robson was against Government control. He believed that in a few years there would be ample business to support all the railways and even more. He had confidence in the ability of the men at the head of the railways and thought they should be given a square chance.

Mr. Douglas favored Mr. Hamilton's suggestion about co-ordination, and explained how it was being worked in England. He had strong views about the future of the railroads, and instanced many cases of duplication and needless expense.

Mr. Ingram thought the original resolution covered the ground thoroughly, and did not favor the addition.

There was some further discussion as to how Mr. Hamilton's amendment should be handled, and various other views were expressed on the general problem. Finally, the amendment was put to a vote and declared lost. The original resolution was carried, with the proviso that it be sent back to the Resolutions Committee for final touching up.

WOODEN STEAMERS.

Industry is Being Revived on Extensive Scale at St. John, N.B.

The semi-centennial of Confederation finds St. John engaged in the construction of a fleet of wooden steamers to relieve the necessities of the Motherland. Grant & Horne have contracted with the Imperial Munitions Board to build two steamers of a cargo carrying capacity of 3,000 tons. These will be constructed in a shipyard that was famous in the days of wooden ships for the magnificent vessels it turned out, but which has been silent, like all other shipyards in this locality, for thirty years or more.

Two other firms are arranging to build wooden ships immediately, with the expectation of later on becoming steel ship plants. These are the St. John Shipbuilding Co. and D. A. Saker, an English builder. The latter has bought the Warner Mill property fronting on the main harbor for that purpose. He will put down three ships at once.

St. John was the home of wooden ships from 1770 to 1884. In 1876, the year preceding the great fire, this port stood fourth in the list of great shipping ports of the world, having 805 ships on the register, aggregating 280,073 tons. The revival of wooden ship-building, after all the old builders had passed away and all the old ship-yards had been dismantled, marks an epoch of great importance in the history of the city.

REPORT OF THE GENERAL SECRETARY

Mr. President and Gentlemen:

Following the practice at previous meetings and with your kind permission, I will refrain from a survey of the year's operations that would unduly anticipate what will be contained in the reports of the various committees, and content myself with gathering together a few of the odds and ends of which you should know, and adding thereto some general observations which my experience as your chief executive officer prompts me to submit.

First of all, I wish to congratulate the Association upon what I believe will always be looked back to as one of its most successful years. There have been years, perhaps, when the results it was able to accomplish were more spectacular; there have certainly been years when its progress financially



G. M. Murray
General Secretary, Canadian Manufacturers Association

gave cause for greater satisfaction. But so far as I can recall there never was a year when the service of the Association was brought more directly home to its scattered membership, and as marking the beginning of a new era in that respect, 1916-17 gives promise of being long remembered.

In order that I may make clear to you the essential point of difference between the old and the new policy, it is necessary for me to remind you that for some years our endeavor to make progress carried us in the direction of building up a strong central organization with specialized departments for handling the different kinds of work that needed our attention. First we formed a Transportation Department, then an Insurance Department, then a Tariff Department, and after that a Legal Department, and a Commercial Intelligence Department. Theoretically, each of these departments had a two-fold duty to perform; it had first to concern itself with the general conditions under which business was transacted and strive to improve those conditions wherever possible; next it had to hold itself in readiness to assist in solving the particular problems of the individual manufacturer in so far as that assistance might be solicited. The former meant rendering a general service, the benefits of which might be shared by a number of manufacturers; the latter meant rendering a special service by way of giving the individual member value for the fee he paid.

Value of the Departments.

As regards the real worth of the general services rendered by our departments, I know that I need say very little. As business men, you have appreciated to the full the efforts of our Transportation Department, for example, to protect you against advancing freight rates, increases in carload minimums, and arbitrary rulings in the classification. The important results we have been able to secure by constant watchfulness and prompt intervention on the part of our standing committees and departmental managers, have more than justified our Executive in the policy they laid down for the development of the Association along centralized lines.

I fear, however, that I cannot speak with the same assurance to an assemblage in which there is such a large representation of western manufacturers regarding the special or individual service that these departments should have been giving. I do not mean to imply that that service was not cheerfully and effectively rendered whenever it was solicited, for it is a tradition with our staff that a member is a member wherever he may reside, and all are treated with the same courtesy. I do state it as a significant fact, however, that members in nearby places have been in the habit of availing themselves of the privileges of membership much more regularly and freely than members in places remote from Head Office. No doubt one reason that they have done so is that they have a better general idea as to what the Association can do for them; they have been able to attend meetings of the Association more frequently than their fellow-members in the Maritime Provinces or in British Columbia and are consequently more familiar with its capabilities and its achievements. Not only that, but in asking the assistance of the Association in any matter, they have always been encouraged to expect prompt action—something, of course, which far-away members could not as reasonably expect, because of the greater time required for the exchange of correspondence.

Recognizing the elements of weakness in a situation of this kind, and appreciating the necessity for remedial measures, your Executive decided about a year ago that the time had come when more attention must be paid to the development of strong branch offices, through which there would be available for the membership in contiguous territory a service comparable to that obtainable at Head Office.

It is the inauguration of that policy that will, I believe, make this a year to be remembered in the history of our organization. Those of you who are located in Manitoba, Saskatchewan, or Alberta can appreciate something of the possibilities of the movement, for you will agree, I am sure, that within the past year the Association has come to mean more to you than ever before. With equal truth it may be said that you have come to mean more to the Association than ever before, because in numbers and influence you have added immeasurably to its strength. It is the intention of your Executive to pursue with respect to the Maritime Pro-

vinces and British Columbia the same policy that has already begun to bear fruit in this territory. Arrangements to that effect were made in January, and the Maritime Provinces' office has already been opened. But for the unfortunate fact that the man we had chosen for British Columbia was taken from us by private interests who appreciated his abilities more than we did ourselves, the service from our Vancouver office would also have been in full operation by this time. I think I can promise that it will be in operation by September or October, and when it is, we will be in the proud position of having a chain of offices from the Atlantic to the Pacific, all manned by officials who are conversant with the policies and achievements of our organization, who have been specially trained for their work by our departmental managers and who will be able to bring the benefits of membership to the very door of those who give us their support.

Extension of Activities.

It gives me a good deal of satisfaction to be able to report progress in the execution of this new line of policy—first because of the acquisitions of strength I am sure it will bring us in the territories to be served, and second because of the convincing evidence it gives us that henceforth the business affairs of the Association are to be administered with courage. In authorizing these extensions the Executive were fully aware that it would involve initial and possibly permanent expenses considerably in excess of the revenue derivable from the fees of the tributary membership. They refused to allow themselves to be influenced, however, by any thought of making each office self-sustaining. Their sole desire was to give practical recognition to the principle that the Association can live and grow only by making itself useful.

That the means they have adopted to ensure its usefulness will prove successful, and that the attaining of that object will in turn ensure growth, are both beyond question. It is almost beyond question that a growing organization, whose members in all parts of the Dominion are held together by bonds of mutual helpfulness, will wield a steadily increasing influence that cannot help but add still further to its usefulness, so long as its energies are directed along legitimate lines and with due regard to the rights of others. I do not hesitate, therefore, to express my enthusiastic hopes for the Association under a policy which wisely supplements a highly specialized central organization with strong branches through which its manifold services can be given local application.

But to continue that policy in operation we will need to provide ourselves with a larger revenue than we now possess. This year, with only the added expense of the Winnipeg office to meet, we have found it necessary to draw upon our reserves. Next year, with the Amherst and Vancouver offices to swell our fixed charges, we will have to draw upon them to an even greater extent unless at this meeting such action is taken with regard to the fees as will secure us a revenue adequate to any requirements that may arise. Your Executive initiated the new policy, feeling confident that even though it involved raising the fees, you would instruct its continuation once you understood the advantages that would accrue from it, and I sincerely trust that you will not disappoint them.

I do not wish, however, to make it appear as though the increase were necessitated entirely by the plans we have in view for the building up of our branches. There are other kinds of work in which we will probably find it advantageous to engage, providing we are financially able to do so. For one thing, I would like to see our Legal Department reconstituted in a manner that would bring it back into alignment with our other departments. Our usefulness in connection with legal advice is not what it ought to be. Organizations similar to ours in the United States provide their members with a monthly budget of opinions, given by competent practitioners, dealing with all sorts of legal points about which a business man should have information. For a moderate outlay we could do the same thing and give our members a service that would cause them to appreciate their connection with us as never before. To cite another illustration, I believe the time will soon come, if indeed it has not already arrived, when our Association should command the services of a first-class chemist. Such a man could be profitably employed in connection with customs work and with the regulations of the Inland Revenue Department; he could be of incalculable assistance in bringing the energies of the Industrial Research Board directly to bear upon problems of immediate importance to our members. He could give effective aid in the definition of standards of certain kinds and in promoting their adoption. In addition to all this he could supplement in a most practical manner the individual service we aim to supply.

Something I have not waited to obtain authority for, but with which I am now proceeding, is the acquisition of a good reference library on commercial subjects. We already have the nucleus of such a library, spread about among our several departments, but I propose to consolidate it and put it in charge of a librarian, whose duty it will be to see that it is kept fully up-to-date and that the information it contains is made easily accessible by proper indexing.

These are simply a few examples of improvements that might profitably be made, all involving permanent additions to our fixed charges. Once we have them provided for, other extensions will undoubtedly present themselves which it will be advantageous for us to put into operation, for to anyone possessed of vision it must be apparent that there is almost unlimited scope for the activities of an organization such as ours.

But meanwhile we should not lose sight of the desirability of maintaining ourselves in a position where we can always undertake temporary projects of an important character. Hardly a year passes but what something of this kind has to be done. Last year it was the Insurance investigation and the bringing of test cases to protect the John Deere judgments. This year it may be the calling of a national business conference to prepare for the situation that will be upon us when the war is over. There is a responsibility for leadership resting upon us in such matters which we ought to be prepared to assume and which we could assume with credit to ourselves and profit to Canada if the resources at our command were always ample.

Revenue Should be Ample.

I would be the last to accuse Canadian manufacturers of parsimony, for I know that their hands are always in their pockets to help along causes that are worthy. I feel quite satisfied that were the need suddenly to arise, we could collect from the membership by voluntary subscription $50,000 or even $100,000 to enable us to see any commendable project through. I am informed, for example, that our members are among the largest subscribers to a fund which the Retail Merchants' Association is now trying to raise for the purpose of ensuring the defeat of a piece of objectionable legislation, and there is no reason to suppose that in an emergency they would not support their Association as generously as they support one over which they have no control. The point I wish to make, however, is that our stable revenue should be made ample for all reasonable purposes; that it should be

brought up to a figure where the question of special subscription need hardly ever arise.

I fear that by some of you any proposal to increase the fees will be viewed with suspicion, not because you are unwilling to bear your own share of such increases, but because you are doubtful of the attitude of others who have supported us in the past, but who have taken little interest in our work. All I will say on that point is that if from an increase in the fee we can realize each year one-quarter of the amount which I believe we could collect to-day were we to call for voluntary subscriptions, all our financial difficulties would be set at rest.

Desirability of Bulletins.

Prior to any increase going into effect, however, I would like to recommend that authority be given me to devise some means of keeping our membership more fully informed of what is being done in its behalf. When our organization was smaller than it is to-day, we were able to use INDUSTRIAL CANADA for that purpose to excellent advantage. But of recent years the tendency has been to develop it along magazine lines with the idea of making it less a house organ and more a journal that would appeal to Canadian business men generally. Under that policy it has been made quite a success from the financial standpoint and for that reason I would be loath to suggest any change. I can distinctly recall, however, the splendid service it rendered in the earlier days, when as a four-page bulletin of Association news, sent out as a circular in an ordinary envelope, it was read by all members with keen interest. Such a bulletin is now being distributed from our Winnipeg office, reporting on the work conducted from this centre. If it is serving a useful purpose—and I am informed it is—then the circulation of a bulletin from Head Office, with its wider range of activities, should prove doubly effective. Heretofore, one of the most fruitful causes of resignation has been the failure of some members to appreciate our worth, due to their lack of knowledge as to the problems we were handling and the results we were securing. A monthly bulletin of Association news would supply this want and prepare the way for the more favorable reception of any increased fee this meeting might see fit to order.

While on this question of finance, I thought it might be interesting for you to know that the Association now has on its pay-roll twenty-nine employees, to whom it pays in salaries almost $48,000 per year. Three of those employees are for the time being on active service, and are being carried on half pay. I mention these figures for two reasons: First, because they show, when compared with our revenue of $58,000 from membership fees, how small is the amount left over for meeting other necessary expenses. Indeed, were it not for the incidental revenue we derive from INDUSTRIAL CANADA, the *Trade Index*, and interest on our investments, we would not have enough to get along. I am glad to mention them for another reason, because it gives me an opportunity of expressing on behalf of the staff how much they appreciate the generous treatment they have always received at your hands, and how loyally they are prepared to continue to serve you.

Miscellaneous Activities.

In conclusion, I desire to record just a few items which ought to be brought to your attention, but which are not dealt with in the Committee Reports that will presently be laid before you.

During the year the Manager of your Transportation Department and myself were summoned to give evidence on behalf of the Association before the Dominion Royal Committee, on which occasion we undertook to voice your attitude upon such matters as import and export freight rates, steamship services and the control of rates on subsidized lines, improvements that were needed in our statistical methods, exhibitions, marks of origin, and the certification of invoices as a means of promoting inter-Imperial trade, weights and measures, and other matters of general interest. The hearty co-operation of the Association has been given to the Honorary Advisory Council for Scientific and Industrial Research. In anticipation of a questionnaire which that body announced its intention of distributing, our Association bespoke the prompt and sympathetic attention of all its members who might be approached, in addition to which your staff undertook to furnish the Board with a mailing list embracing all lines of production. As evidencing our willingness to work in harmony with other organizations, it is a pleasure for me to state that during the year we became affiliated with the British Empire Producers' Association, and the Joint Committee of Technical Organizations; we have co-operated to the best of our ability with the Economic and Development Commission, whose report, unfortunately, is long overdue; with the Canadian Forestry Association in striving for better legislation to protect our forest resources against fire, while through our Winnipeg office we have worked with the Joint Committee of Commerce and Agriculture in an effort to bring about a better understanding between the farmers, the manufacturers and the financial and transportation companies operating in this western territory.

Libel Action.

The libel action which was launched against me nearly two years ago as the result of an article appearing in INDUSTRIAL CANADA, which I did not write and for which the then president assumed full responsibility, has not yet been brought to trial. The Council has been good enough to guarantee me protection in the event of an adverse judgment, so that it is only fair I should advise you that there is this contingent liability always hanging over us. It is possible that the plaintiff is delaying bringing the action to trial pending the return of the editor of INDUSTRIAL CANADA, who is now on active service.

It was my misfortune during the year to receive a good deal of undesirable notoriety in connection with an appointment I was requested to accept by the Director-General of National Service. I was prepared at the time to ask the Executive to give me indefinite leave of absence, believing that the appointment offered me an opportunity to accomplish something for the country that would have been worth while. For reasons into which I would prefer not to enter, I withdrew from National Service almost before I had fairly begun. I should not have mentioned the incident at all but for the fact that it was made the occasion for a good many comments in the press which did me more or less injustice. I am glad, therefore, to have this opportunity of stating that in announcing myself as ready to accept the appointment I was influenced solely by a desire to engage in work that I believed would enable me to give my country better service. The sincerity of my motives may be judged by the fact that I stipulated as one of the conditions that I was to receive no salary. I further wish to state that I withdrew from National Service only when it was made clearly evident to me that my time would be better employed in the service of this Association.

Respectfully submitted,

G. M. MURRAY.

AUDITOR'S REPORT

30th April, 1916.			30th April, 1917.
	Liabilities.		
$20,942 09	Fees paid in advance	$23,296 23	
1,463 82	Accounts payable	4,082 75	
$22,405 91			$27,378 98
50,168 49	Surplus—		
	30th April, 1916, by balance	$50,168 49	
	30th April, 1917, less deficit for year	5,535 15	
			44,633 34
$72,574 40			$72,012 32
	Assets		
$ 6,277 51	Cash on hand and in bank	$10,783 84	
48,394 51	Investments as per Schedule "C"	48,560 03	
1,033 48	Interest accrued on above	803 93	
55,705 50			$60,147 80
	Accounts receivable	$7,552 10	
	Less reserve for bad debts	1,000 00	
6,425 60			$6,552 10
247 90	Fees accrued and due	265 01	
			6,817 11
619 40	Rent paid in advance		
2,017 90	Trade Index, 1916, advance payments		
1,402 95	Advances re Workmen's Compensation Act	99 85	
1,060 66	Made-in-Canada Campaign	1,060 66	
			1,160 51
5,094 49	Furniture and fittings		3,886 90
$72,574 40			$72,012 32

Audited and found correct.

WILTON C. EDDIS & SONS,
Chartered Accountants.

REVENUE ACCOUNT.

For Year ending 30th April, 1917.

1917. April 30th.			
To Expense—"Schedule "A"		$64,637 59	
" Bad debts		451 57	
" Depreciation, furniture		1,964 00	
" Companies test case		2,988 29	
" Ontario insurance investigation		900 00	
" Workmen's Compensation Act, Manitoba		500 00	
" MacLean libel action		225 00	
" Organization expenses for safety Associations		492 00	
By Membership fees			$55,424 45
" Interest			2,824 46
" INDUSTRIAL CANADA—Schedule "B"			6,131 99
" Trade Index, 1916			2,242 40
" Deficit for year carried to Balance Sheet			5,535 15
		$72,158 45	$72,158 45

SCHEDULE "A."

EXPENSE ACCOUNT.

For Year ending 30th April, 1917.

Annual Meeting, 1916		$1,067 13
Branches—		
British Columbia	$ 632 30	
Hamilton	907 75	
Maritime Provinces	1,220 79	
Montreal	3,769 97	
Prairie Provinces	8,023 59	
Quebec	321 48	
Toronto	2,144 12	
		17,020 00
Certificates		354 52
General counsel fees		2,768 00
Departments—		
Commercial Intelligence		3,107 90
Insurance		1,499 94
Tariff		7,596 46
Transportation		13,087 78
Exchange		99 88
Postage		1,093 85
Printing and stationery		2,244 39
Rent and light		1,108 38
Salaries		11,958 56
Sundries		579 46
Telegraph and telephone		295 44
Translations		94 99
Travelling		660 91
		$64,637 59



—British & Colonial Press photo.

J. F. Ellis
Barber-Ellis, Limited, Toronto
Treasurer, 1917-18, Canadian Manufacturers Association

SCHEDULE "B."

INDUSTRIAL CANADA.

Statement showing Income and Expenditure for year ending 30th April, 1917.

INCOME.

Advertising—Display	$27,790 17
Advertising—Buyers' Guide	1,418 73
Sales of Copies	150 52
	$29,359 42

EXPENDITURE.

Electros	465 05
Special literary matter	184 75
Postage and distribution	1,287 41
Printing and stationery	12,436 20
Rent and light	1,100 04
Salaries	6,983 53
Telegraph and telephone	60 09
Travelling	322 56
INDUSTRIAL CANADA Prizes	330 00
Sundries	57 80
	$23,227 43
Profit for year	6,131 99
	$29,359 42

SCHEDULE "C."

INVESTMENTS.

Due. Date.	Rate Interest Per Cent.	Bought to Yield Per Cent.	Par Value.	Amortised Value
1 July, 1944, City of Toronto bonds	3½	4.25	4,866.67	4,278.05
1 Sept. 1920, City of Hamilton	4	4.22	4,000.00	3,973.97
1 Jan., 1941 City of Stratford	4½	4.25	10,000.00	10,353.21
30 June, 1942, Riordon Pulp & Paper	6	6.1	5,000.00	4,955.01
1 July,1948 City of Toronto	4	4¾	6,326.66	5,555.22
1 Oct., 1932 City of Brandon	5	5.10	10,000.00	9,893.59
1 July, 1925 City of Toronto	4½	5.4	5,000.00	4,714.08
1 Dec. 1925, Dominion War Loan	5	5.46	5,000.00	4,836.90
			$50,193.33	$48,560.03

ENTERTAINMENT FEATURES

The Association's Hosts in Winnipeg Left Nothing Undone for the Enjoyment of the Visitors.

All was not business at the Winnipeg Convention. While the meetings were attended more regularly than usual, ample opportunity was given for seeing Winnipeg and for enjoying the hospitality of its citizens. The western spirit quickly took possession of the visitors and they entered into the entertainments after hours with the same zeal that they devoted to the Association's welfare at the business sessions.

The Convention Headquarters were admirably suited to such a gathering. The Fort Garry Hotel leaves nothing to be desired in elegance of equipment or courteousness of service.

A Committee of Winnipeg manufacturers left nothing undone to complete the entertainment and enjoyment of the visitors. Western hospitality took on a new meaning under the genial good-fellowship of Mr. Ingram and his lieutenants. The appreciation that was expressed formally at the closing meeting was expressed informally by every one who had the good fortune to be present.

The Smoker.

The smoker on the evening of the opening day was made the occasion of an official welcome by Mayor Davidson, as representing the city, and Premier Norris, on behalf of the Province of Manitoba. Mr. W. R. Ingram was chairman and carried through the programme of music and speaking with fine spirit.

The Mayor spoke enthusiastically of the growth of Winnipeg. His sketch of the industries and commercial activities of the city was of great interest to all and of much surprise to those who had not kept in close touch with the Middle West in recent years.

Premier Norris enlarged on the wealth and opportunities provided by the Province of Manitoba. To those who had looked on Manitoba as exclusively an agricultural province, outside of Winnipeg, his story of the fish, timber and mineral resources was illuminating.

Speaking for the Association, President Cantley and Vice-President Parsons expressed the appreciation of the visitors of the kinds words of welcome which had been spoken and the preparations which had been made for the comfort and entertainment of the delegates.

During the evening a musical programme was presented.

Entertainment for the Ladies.

The ladies were looked after attentively by a local Committee, which showed the utmost hospitality and versatility. When the weather was inauspicious for one form of entertainment another equally attractive was promptly substituted. The first afternoon proved too chilly for a drive to the Country Club so a theatre party was arranged. Afterwards the ladies returned to the Fort Garry for tea.

To take the place of a boat trip on Thursday a musicale was provided at the Fort Garry. A fine programme was rendered in the Rose Room, after which tea was served.

Reception by Lieutenant-Governor.

On the second evening of the Convention, the Lieutenant-Governor, Sir James Aikens, entertained the manufacturers at Government House. The grounds were gaily illuminated with colored lights and the spacious Reception Rooms and Ball Room were made beautiful with a wealth of flowers.

After Sir James had received his guests he invited the party to the Ball Room where he again welcomed the Association officially. Col. Cantley and Mr. S. R. Parsons returned thanks on behalf of the guests. Following some music refreshments were served.

The evening showed a spirit of generous hospitality on the part of the Lieutenant-Governor and it was enjoyed most thoroughly by the visitors.

A NEW DEPARTURE.

E. T. Carter & Co., Toronto, who have hitherto confined their attention to dealing in wool, hides, yarn, raw furs, etc., have added to their business a cotton and cottonseed products department for the sale of raw cotton, cotton linters, cottonseed cake, meal and oil. They have established connection at different points throughout the cotton belt and also in the principal cotton and oil markets of the United States. Mr. A. B. Carr, who has for the past nine years conducted a brokerage office at Houston, Texas, for the sale of the products mentioned, will be in charge of this branch of the business.

REPORT OF THE EXECUTIVE COMMITTEE

IN the absence of our esteemed Treasurer, Mr. George Booth, who cannot be with us at this meeting, your Executive Committee have thought it well to introduce their report with a few comments on the Annual Financial Statement, copies of which are before you.

Our revenue for 1917 was the largest we have ever enjoyed, being $66,623.30 as against $63,493.27 for 1916, which was the next best year. The difference is mainly attributable to the publication of the *Trade Index*, which yielded a profit of $2,242.40. The earnings from INDUSTRIAL CANADA show an increase of $613.33, and we have received $376.54 more in the way of interest on investments. The revenue from Membership Fees was practically the same as for 1916.

Notwithstanding these elements in our favor, we have incurred a deficit on the year's operations of $5,535.15, whereas last year we showed a surplus of $4,922.59. There has been a marked increase of expenditure in a number of directions. To begin with, we show an extra allowance for depreciation of nearly $1,600. Heretofore it has been our practice to enter our new furnishings at cost, and write off from 5 to 10 per cent. at the end of each year; this year we inventoried everything afresh and wrote it down to its approximate value as second-hand material. Our expenditure on Branches has increased $5,500, the Winnipeg Office alone accounting for $4,000 of the difference, and the Maritime and British Columbia branches for $900 and $600 respectively. For special counsel fees we have spent approximately $2,000 more than in 1916, mainly in connection with insurance and workmen's compensation matters. On the Extra-Provincial Corporation Test Cases our disbursements have been practically the same. Our Transportation Department cost us nearly $1,300 more, and we have written off items aggregating $1,000 which were carried in last year's statement as accounts receivable. Of the latter amount $492 consisted of monies advanced to assist the organization of safety associations which were never completed, in consequence of which the money could not be collected; the balance was made up of preliminary organization expenses incurred in behalf of the Export Association of Canada, Limited, which your Committee preferred to cancel as their way of contributing to the cause of developing Canada's export trade.

The Association's Finances.

We begin the new year with liquid assets of $60,147.80, with accounts receivable, less ample reserve for bad debts, of $6,552.10, and other assets of $5,047.41. In the liability column we show accounts payable amounting to $4,082.75, and a liability to our members of $23,296.23 for fees paid in advance and unearned. Our net surplus, therefore, on the first of May was $44,633.34.

In the matter of salaries, your Committee put through increases, effective May 1st, totalling $3,760 for the year. They were glad to do so because they had reason to know that the Association was served by a good staff who were fully deserving of the increase; they felt, moreover, that it was only good business to let such a staff understand that it would be taken care of, and thus remove, as far as possible, the temptation to look for more remunerative employment elsewhere. In these days of steady advances in the cost of living, with a scarcity of dependable help and firms bidding against one another for such help as is to be had, it behooves our Association to make sure that the salaries it pays to trusted and experienced employees are equal to the best. The Association should never regard itself as unable to pay the salaries that a private corporation can pay, for a valuable man can hardly be worth more to an individual manufacturer than he is worth to an association of manufacturers. We lost one good man this year because we were not able to pay him sufficient salary to hold him. Your Committee feel, therefore, that the revenues of the Association should be immediately placed upon a basis that will enable it to retain the services of those who have proven themselves efficient.

Need for More Revenue.

From the standpoint of new work that might be undertaken, work that would involve the employment of a larger staff and other additions to our fixed or extraordinary charges, the need for more revenue is doubly urgent. As the President so aptly stated in his address this morning, we are fast approaching a time when the manufacturers of this country will need the help of a strong and well staffed organization as they never needed it before, when they will be confronted with problems that can be solved only by the closest kind of co-operation and the liberal expenditure of money. The Association should be preparing for that time now, particularly in view of the fact that it may be called upon to face a business depression that will make heavy demands upon its reserves.

It was to take care of this situation that your Committee arranged for notice of motion to be given calling for a general increase in the schedule of membership fees. There is no question but what a larger revenue could be employed to excellent advantage in extending and in improving the service given to our members. There can hardly be any question as to the ability of any member to contribute the small additional amount asked of him. With labor, material—everything, in fact—going up in price, it is not to be expected that the Association can operate on the same economical scale as formerly. While the heaviest increase suggested represents an advance of 50 per cent., in amount it is only $5 per year. It is proposed that a firm employing from 10 to 30 hands shall pay a fee of $15; 30 to 60 hands, $20; 60 to 100 hands, $35. From an intimate knowledge of what the Association has done, is doing, and will continue to do, we say unhesitatingly that there is no manufacturing firm in Canada employing 100 hands, be it member or non-member, that is not receiving benefits from our work to the value of far more than $35 every year. We feel that we need offer no apology, therefore, for recommending the increases to this meeting, believing as we do that you will readily appreciate the necessity for them, and the important advantage to yourselves in securing the continuance of a valuable service at so moderate a cost.

Canadian Trade Index.

The new edition of the *Canadian Trade Index* has made its appearance since last Annual General Meeting, and your Committee have no hesitation in characterizing it as the most complete classification of Canadian manufacturers that has ever been gotten out. The number of headings has been increased from 4420 to 6225, and the classification throughout has been made to conform much more closely to trade practices. The country was scoured for the names of additional manufacturers who should be included, with the result that the number of firms listed was increased from 4,700 to 7,200.

The miscellaneous commercial information that was interspersed among the advertising pages of the 1914 edition and the Spanish index at the back of the book were both omitted.

To make up for the elimination of these features, the old alphabetical list of manufacturers was restored. This, we believe, has greatly added to the value of the book, because of the opportunity it has given to state, with regard to each firm, the name of its various brands, its foreign representatives, its cable address and the codes it uses. Houses requiring a mailing list of Canadian manufacturers have found these pages very useful, and the sale of the book has been considerably increased on that account. Mention should also be made of the fact that in this edition, for the first time, we have ceased to differentiate as between members and non-members, all names being arranged strictly in alphabetical order and displayed with equal prominence.

Financially the edition was a success. The total advertising carried was $14,410, of which $14,150 was actually collected by April 30th. The revenue from the sale of copies to the same date was $1,267. The total cost of publication, including $6,827 for paper, printing and binding, $2,668 for office expense, $2,725 for commissions on advertising, and $1,215 for distribution, amounted to $13,435. The net profits to April 30th, therefore, were $2,242.

Industrial Canada.

As will be seen from the financial statement, INDUSTRIAL CANADA has also experienced a very good year. Owing to the marked advance in the price of paper, the cost of printing shows a large increase, $12,436 for 1917, as compared with $9,345 for 1916. As against this, however, the receipts from advertising show a gain which more than offsets the increased cost of publication. In 1916 the total advertising carried was $24,309; this year it reached the highest figure the paper has ever recorded, namely, $29,208. Other expenses chargeable against INDUSTRIAL CANADA have been maintained on about the same level as for 1916. The net profit of $6,131 carried forward to revenue account must be regarded as very satisfactory, considering the general business situation.

Offices.

Besides its Head Office in Toronto, the Association maintains Branch Offices in Amherst, N.S., Montreal, Hamilton and Winnipeg. An office will be opened in Vancouver just as soon as the services of a suitable secretary for that territory can be secured.

The lease of the quarters occupied in Toronto expired on December 31st. Generally speaking, those quarters were well suited for our purposes, though a little small, so when your Committee found they could secure an extra 360 square feet immediately adjoining and obtain a renewal lease for five years for the same annual rental as before, they closed. The total space occupied for Head Office purposes is now 5340 square feet, and at $6,450 per annum it figures out at just a little over $1.20 per square foot, which is a reasonable charge considering the central location and other conveniences.

The Montreal office has recently been considerably enlarged, and new furnishings have been purchased for its Board Room. Our quarters there are secured by a three-year lease executed only two months ago. The Amherst office, opened in April, is on a monthly tenancy as yet, but a lease will be arranged as soon as the Committee of the Branch decide on a permanent location and the amount of space they will require. Our Hamilton office, used only for meeting purposes, is on a monthly tenancy, while our Winnipeg office is secured under a two-year lease which still has one year to run. Our total obligations per year for rent now amount to $8,262.

Communications.

Your Committee took occasion to communicate with the membership on three matters during the year.

The first was in connection with war orders, and was the result of complaints received from a number of quarters to the effect that Canadian manufacturers were not participating to the extent they should in the business of supplying Canadian troops who were actually at the front. Your Committee refused at first to take these complaints seriously, knowing as they did that in the aggregate there was an immense volume of war business coming to Canada, and that most manufacturers were experiencing considerable difficulty in giving satisfactory deliveries. When the complaints continued to come in, not wishing to press their views too far, the Committee instructed the Secretary to circularize the membership, explaining the situation, and stating that any formal complaints in writing, backed up with specific facts, would be promptly investigated. It is a pleasure to be able to report that nothing was brought to light as a result of this invitation to show that Canadian firms were losing business to which they were justly entitled, or that the Government was neglecting the interests of Canadian manufacturers in any way.

When the Minister of Finance announced his issue of War Savings Certificates, your Committee thought it eminently proper that the manufacturers of the country should be appealed to for assistance in promoting their sale. A circular was accordingly distributed, giving full particulars, emphasizing the desirability of encouraging habits of thrift, and pointing out the valuable services employers could render by soliciting their employees to become purchasers. This appeal apparently was very well received, a number of firms responding by giving details of the plans they were putting into effect to enable employees to pay for certificates by deductions from their wages.

As a means of assisting the campaign for increased food production, the importance of which as a factor in reducing the high cost of living and in supporting the Allied cause was fully recognized, your Committee issued a circular suggesting that a canvass be made of factory employees so as to ascertain the names of those who had had farm experience, with a view to the release of at least a portion of such men during seeding time and harvest. Combined with this suggestion it was stated that for the purpose of enabling men to undertake farm work without loss in wages, some firms were agreeing with those who volunteered to make up the difference between what they actually earned on the farm and what they would have earned in the factory. The appeal was probably issued at too late a date to be effective so far as seeding operations were concerned, but it is hoped that it will prove the means of materially increasing the supply of labor required by our farmers during the coming harvest.

Employment of Alien Architects and Engineers.

Early last autumn your Committee gave the Association's endorsation to a resolution which emanated from the Canadian Society of Civil Engineers, objecting to the Government employing alien architects and engineers for work which Canadian members of those professions were fully competent to undertake. The Committee were the more ready to do so because of the fact that aliens are seldom familiar with material that is produced in Canada and almost invariably show preference in their specifications for material that is imported. The objection, moreover, appeared to be fully justified on the ground that Canadians should support Canadian institutions and the men who receive their training therein, for when they fail to do so they simply encourage

the emigration of such men and help to build up other countries at Canada's expense.

At a somewhat later late, the Association was asked to sign a memorial of protest to the Government on this same subject. It proved to be so drawn up, however, as to create the impression that the occasion for it was the engagement of a New York firm of consulting engineers in connection with the erection of the Lindsay Arsenal. Your Committee felt that in that particular instance the Government might be able to justify its action by pleading military necessity, and they deemed it wise, therefore, to withhold the Association's signature. They notified the signatories, however, of their willingness to have the Association represented on the deputation that would present the memorial, in order that the Association might go on record as supporting the general principle at stake.

War Risk Agent.

With a view to securing for Canadian shippers the benefits of the British Government War Risk Insurance, your Committee made representations to the Minister of Trade and Commerce early in the year, asking that steps be taken to have a War Risk agent appointed on this side. Thus far no appointment has been made, though the application was later renewed and assurances received from Ottawa that it was being pressed as consistently as the Government felt free to press it under the circumstances prevailing.

As things are at present, Canadian shippers are virtually debarred from insuring with the British Government. The rule is that the insurance must be actually placed before the vessel sails, but this rule is one which Canadian shippers find it impossible to live up to, because of the fact that steamship companies are forbidden to disclose sailing dates. When the issue was first raised, the Government War Risk rate was 2.10 per cent. as against 5 and 6 per cent. quoted by insurance companies. The War Risk rate is now 5.25 per cent, as compared with 9 and 10 per cent. asked by the companies. It can readily be seen, therefore, that the matter is one of deep concern to manufacturers having cargo insurance to effect. Our own Government claim that they can do no more than present the case to the British authorities and request them to act.

French Exhibition Train.

On the return from France last fall, of the Canadian Trade Commission, Senator C. P. Beaubien, one of the associate members of that body, submitted to the Minister of Trade and Commerce a proposal which he had worked out for an exchange of travelling exhibitions between Canada and France as a means of promoting international trade, Canada to put an exhibition train on tour through France, and France to put a similar train on tour through Canada. The matter had evidently been gone into with great care, for letters were produced showing not only that it had the approval of the French Government and of the leading Chambers of Commerce throughout France, but that three of the leading French railways had agreed to transport the train free of charge, while the Compagnie Generale Transatlantique had also agreed to give free carriage to all exhibits across the Atlantic.

It was part of the project that the exhibition in each case would be shown under government auspices. As an aid in securing favorable consideration from the Canadian Government, Senator Beaubien asked our Association to give its approval and its promise of support.

While the proposition commended itself to your committee as one that would be highly desirable under normal conditions, they entertained considerable doubt as to the wisdom of attempting it at a time when the thoughts and energies of the French people were so fully engaged with more serious matters. It appeared to them exceedingly questionable, moreover, whether the French Government would permit labor, locomotive power and rolling stock to be diverted to such a purpose when all of them were so badly needed in other directions. After consultation with Senator Beaubien and the Minister of Trade and Commerce, it was decided to modify the proposition to one of making adequate preparation for such an exhibition with a view to launching it just as soon as the time become opportune. This change of plan was communicated to the French Government, who naturally gave their approval.

As regards the character of the exhibition and the provision to be made for the expense it would involve, the attitude of the Minister at first was that it should consist mainly of those products and manufactured goods for which Canada might reasonably expect to find a market in France, supplemented by a few cars illustrative of our natural resources. The Government was to undertake the expense of transporting all exhibits to sea-board, and to pay the salary of the General Director who would accompany the train, but all other expenses were to be borne by the exhibitors themselves, who, of course, would be privileged to send selling representatives. Your Committee, on the other hand, have steadily maintained that if the exhibition were undertaken at all, it should be on a scale that would do Canada full credit, and earn for her in the arts of peace a reputation similar to that which the gallantry of the Canadian overseas forces have earned for her in the arts of war. The detailed views of your Committee were fully set forth in a communication to the Minister about a month ago, brief references to which may prove interesting to this meeting as suggesting the possibilities for national advertising which such an exhibition, properly staged, would afford.

Should be Comprehensive.

In the first place, your Committee put themselves on record as of the opinion that the exhibits should not be confined merely to what Canada might reasonably expect to sell to France, but that they should reflect, to as great an extent as practicable, the industrial development of the Dominion. In this connection your Committee laid stress on the point that Canada stood to profit from the exhibition almost as much from immigration and the investment of capital as she did from increasing her export trade.

In view of the difficulties that would be encountered in preparing exhibits to fit into cars of unknown dimensions, and with unknown facilities for lighting, heating and ventilation, it was advocated by your Committee that the rolling stock should be built in Canada to a design specially adapted for exhibition purposes. Remembering, for example, the length of time the train would probably be on tour and the necessity of adopting every precaution to preserve the appearance of perishable goods, it was thought highly desirable that the cars should be made as dust proof and as weatherproof as possible. Remembering, also, the narrow width of the cars ordinarily used in France, it was thought best to enable visitors to view the exhibition without having to enter the cars at all. This consideration prompted your Committee to suggest that they be built with one side hinged either top or bottom, and provided with roller awnings under the protection of which visitors could see the display free from the discomforts of sun or rain.

The next representations of your Committee centred around the necessity for having an abundant supply of literature descriptive of the goods shown, the processes by which they were produced and the plants in which they were manufactured. They offered it as their opinion that for each class of industry represented, there should be a monograph giving all the facts which a prospective customer in France would

desire to have. It was further suggested that accompanying the exhibition there should be a display of moving pictures, illustrative of typical Canadian industrial scenes.

Your Committee fail to see how the exhibition could be carried out creditably without involving an expense of $100,000 and they have accordingly recommended to the Minister that that amount of money be appropriated. Providing this be done, your Committee have undertaken on behalf of the Association to secure suitable displays from approved classes of industry, and to assist in every way towards making the exhibition a success.

National Business Conference.

A project of great importance that has been hanging fire for some time is Sir George Foster's proposal to bring together a conference representing the various producing and business interests of the Dominion, for the purpose of considering and preparing for after-the-war trade problems.

When the conference was first announced somewhat over a year ago, it was received with instant approval. It needed no argument to prove that it could be made to serve an exceedingly useful purpose, and representative bodies from all parts of the Dominion encouraged the Minister to go ahead.

To ensure such a conference leading to definite results, however, it was necessary that a great deal of preliminary spade work be done, and the class of people best able to do that work were the business men themselves. Unfortunately, while the project had everybody's blessing, it proved to be exceedingly difficult to obtain for its promotion the practical assistance of those men whose knowledge and experience marked them out as the ones best fitted for the work. It was agreed on every hand that the work should be done, yet every one who was invited to help seemed well content to leave that duty to others. There was also the feeling that the problems to be approached all belonged to a future that was full of uncertainties, whereas, the immediate present offered a whole series of other problems toward the solution of which the business man felt he must devote his entire energy.

But while this might have described the attitude of the average business man a year ago, when the outlook was much less bright than it is to-day, it can hardly be said to reflect his present attitude, for with a general improvement in the war situation, and with optimism on the increase, there are good reasons for believing that the time has now arrived for definitely launching the undertaking.

The proposals submitted by your Committee to the Minister contemplate dividing the field of enquiry into a number of logical divisions, and assigning each division to a Committee, whose duty it would be to make full investigations and to prepare a report thereon, coupled with such recommendations as they might deem wise to make. Merely as evidencing the extent of the field that could be profitably investigated, and without any desire to limit that field in any way, your Committee suggested the appointment of Committees to deal with the following matters:—

1. *Reducing Imports into Canada by Increasing Home Production.*

Trade returns indicate probable field.

Better classification of returns to show exact kinds of goods imported; e.g., all N.O.P. items to be amplified. Difficulties to be studied, e.g., tariff on raw materials, import freight rates on raw materials, skilled labor, etc., and what co-ordination of effort, from Government down, could accomplish in this direction.

Where home demand insufficient to warrant establishment of industry, possibility of manufacturing for export.

2. *Increasing Exports from Canada.*

Imports of principal countries, of a class Canada is capable of producing, to show possible field. Share of that trade enjoyed by each of Canada's competitors. Our advantages or disadvantages in each market, with respect to (*a*) tariff, (*b*) steamship service and rates, (*c*) export bounties, (*d*) credit and collection facilities, (*e*) commission houses, (*f*) general commercial intelligence.

German methods for development of export trade, e.g., combinations of manufacturers, and adaptability of such methods to Canada.

3. *Framing of a Scientific Tariff for Canada, to meet New Conditions in Empire and World Trade.*

What it will mean for Canada to be admitted to economic union of Allies, to preferential treatment within Empire. Sacrifices that might profitably be made in order to derive fullest benefit from opportunities thus presented. Revision of drawback regulations to encourage use of domestic rather than imported material.

4. *Credit Information and Banking Facilities.*

How Canada is handicapped in these respects as compared with other countries.

How this condition has helped build up New York commission and export houses and made difficult the establishment of similar houses in Canada.

Foreign branches of Canadian banks.

5. *Transportation.*

Import and export freight rates.
Terminal facilities for storage, loading and unloading.
Marine insurance.
Direct services—subventions to encourage—control of rates.
Parcel post—telegraph and cable rates.
Export trade as factor in making our transcontinental lines pay.

6. *Labor—Technical Education and Immigration.*

The labor problem, skilled and unskilled, for farm, mine, factory.

Possibility of securing temporary relief through modification of immigration regulations and immigration policy.

Technical and vocational education as means of permanent betterment.

7. *Natural Resources and their Proper Utilization.*

Tariffs, "Made-in-Canada" specifications and other policies that will encourage development of Canadian resources heretofore undeveloped.

Encouraging the export of goods in their most highly manufactured form, e.g., nickel, paper rather than pulp.

Research that will lead to the proper utilization of waste.

8. *Supervision of Industrial Development.*

Municipal bonusing systems, and illogical development for which they are sometimes responsible.

Industrial promotions for stock-jobbing purposes.

Industries prematurely established or established in numbers that lead to ruinous competition.

Appointment of advisory committee.

German system of control and its adaptability to Canada.

9. *Industrial Research.*

Possibilities of co-operation between university and manufacturer for investigation and solution of industrial problems; (*a*) secret processes, (*b*) betterments or discoveries for general use of the trade. Special kinds of research to be undertaken by Dominion or Provincial Governments. Doing for manufacturing industry what is already being done for agriculture.

Individual effort in field of research.

What other countries have done and how it has profited them.

10. *National Commercial Intelligence Service.*

Extension and improvement of Trade Commissioner service, special training necessary to qualify for. Use of consular certificates as means of acquiring valuable commercial intelligence.

11. *Providing Special Education and Training for Canadian Commercial Representatives in Friendly Export Markets.*

Courses in our universities for commercial languages acquiring familiarity with foreign weights, measures, currency, etc.

Lectures on salesmanship.

Study of national characteristics as aid to salesmen.

12. *The Revising of Existing Legislation—Federal, provincial and municipal—which restricts the freedom of internal trade in Canada.*

Relative jurisdiction of Dominion and provinces in matter of company incorporation should be determined, by amendment of B.N.A. Act if necessary.

Municipal by-laws that are designed to control "selling to the consumer" and abuses practised thereunder.

Embarrassing restrictions on sale of agricultural implements. Interference with securities and curtailment of credit.

Advantages that would follow uniformity of provincial legislation in such matters as lien laws, boiler construction, etc., etc.

Over and above these Committees it was suggested that there should be a small Executive Committee, with whom the others would keep constantly in touch, and through whom harmony of action could be secured. This Executive Committee, it was urged, should be provided with ample funds, not only to finance the work of the other Committees, but to obtain suitable publicity for the conference, first, by keeping the press supplied with articles of timely interest, and, second, by furnishing representative trade organizations throughout the Dominion with copies of the Committee reports well in advance of the conference, so that each organization would have ample time to study same and instruct its delegates as to the views they were to express.

Following the submission of these views to the Minister, your Committee arranged for an informal conference of men representing various trade interests, including agriculture, mining, fishing, lumbering, manufacturing, banking and transportation. The conclusion reached by that meeting was that the project should be immediately gone ahead with, and without attempting to map out a programme, they adopted a resolution calling upon the Prime Minister to appoint, and to convene forthwith, a Committee comprised of one representative each from the organizations and interests noted below, for the purpose of calling a national conference on matters pertaining to after-the-war trade, and other problems incidental thereto, the said Committee to be empowered to prepare reports and resolutions for submission to the conference, and to be provided with funds adequate to their work.

The interests to be represented on the Committee were the Canadian Bankers' Association, the Canadian Fisheries Association, the Canadian Forestry Association, the Canadian Lumbermen's Association, the Canadian Manufacturers Association, the Canadian Mining Institute, the Canadian Press Association, the Canadian Shipbuilders' Association, the Canadian Society of Civil Engineers, the Trades and Labor Congress, Canadian Agricultural interests, Canadian Dairying interests, Canadian Fruit Growing interests, Canadian Stock Raising interests, the Railways of Canada, the Navigation Companies of Canada, together with one from each Province to represent the Boards of Trade.

It was the thought of the meeting that this Committee would act largely in an advisory capacity, and would meet only for the purpose of enunciating policies and determining general lines of action; that the executive work would be delegated to a small committee, of perhaps three and not more than five, chosen from the larger Committee, and comprised of men who would be prepared to devote a great deal of their time and energies towards making the conference a success.

So far as your Committee are aware, the whole matter still stands in abeyance. If it is the opinion of this meeting that the conference should be gone ahead with, a resolution to that effect will be in order, preferably coupled with a recommendation as to the best means of bringing it about.

All of which is respectfully submitted.

S. R. Parsons, *Vice-Chairman.* G. M. Murray, *Secretary.*

Discussion.

The adoption of the report was moved by Mr. Parsons and seconded by Mr. Cox.

In speaking to the motion, Mr. Roden referred to the National Business Conference mentioned in the report and urged that action should be taken by the Association on the subject. Information as to what is being done in Great Britain and the other Dominions to co-operate in a general scheme for preferential tariffs and other important matters should be procured, so that members might be in a position to study the situation.

Mr. Parsons said he wished to dispel any idea that the Executive had not been alive to the necessity of action. The Executive had given a great deal of attention to it.

"But if anyone can tell us," added Mr. Parsons, "when the war is going to end and just what problems we are to be faced with in any way of a certainty, we would know a great deal better what to do. I think the more you go into this thing the more you will realize that at the present time the war in its changing situation makes almost impossible anything like an effective programme which we could put before the manufacturers to work to after the war is over. We are not working by ourselves in Canada; we are part of a great Empire; we are one of the Allies; we shall probably all work together. The United States now having come into the war on the side of the Allies enlarges our proposition to some extent and we are naturally waiting for the Department of Trade and Commerce to give us the lead; and they themselves, I believe, realize how difficult it is just now to put up a programme which we could consider a wise one to get down and work to definitely at the moment. The condition is so full of uncertainty that when you study this a little bit you will see how difficult it is at the present moment. While we have something before us here which means working to a programme, yet at the same time when you come to take it up definitely now, especially in view of the fact that the Government has not given us the lead which we have asked them for and which we believe they will give as soon as they see the matter can be taken up to advantage, I believe you will realize we have not been quite asleep at the switch on the question, but the time has perhaps not yet arrived when we could give more definite thought and work to the problem."

Mr. Roden thought that a special committee should be appointed to bring in a resolution on the matter. He would like to move for the appointment of such a committee, after the adoption of the report.

Mr. Deacon pointed out one or two outstanding facts with regard to the future, which he declared to be about as certain as the rising sun.

The report having then been adopted, Mr. Roden introduced his motion for the appointment of a special committee, which would "draft a resolution expressing the wishes of this convention to memorialize the Government to call into conference representatives of financial, industrial and agricultural interests to prepare for after-the-war problems." The motion was seconded by J. P. Murray and carried, and the following committee was named by Mr. Roden:—Mr. Deacon, of Winnipeg; Mr. Henderson, of Montreal; Mr. J. P. Murray, of Toronto; Mr. Douglas, of Hamilton, and the mover.

RECEPTION & MEMBERSHIP

IT is with very great pleasure indeed that your Membership Committee are able to report that numerically the Association is stronger to-day than at any other period in its existence. Not only has the loss for 1916 been fully retrieved, but a gain has been made which puts us at a figure nearly 200 higher than for any previous year.

It will be remembered that at the last annual meeting there was a good deal of discussion in regard to the need for providing the Association with a larger revenue. As one means to that end it was advocated that the fees be increased, but the feeling of the meeting seemed to be that such a course ought to be avoided so long as there was any reasonable possibility of securing the requisite additional income by increasing the number of members.

On assuming office your Committee at once applied themselves to the duty expected of them. Considering the fact



—British & Colonial Press photo.

J. Allan Ross
Wm. Wrigley Jr. Co., Limited, Toronto
Retiring Chairman, Membership Committee, Canadian Manufacturers Association

that the Association's own publication, the "Canadian Trade Index," listed the names of nearly 7,000 Canadian manufacturers, of whom barely 3,000 were members, it did not appear too optimistic to expect that within the year 500 applications could be secured. Such an accomplishment seemed the more feasible when it was recalled that nearly three years had elapsed since anything in the way of a vigorous membership campaign had been attempted. That, at any rate, was the goal your Committee set for themselves, and while they are unable to report complete success, they have the satisfaction of reporting very substantial gains, with the prospect of more to follow.

Under ordinary circumstances your Committee would have preferred to concentrate their energies upon the plan of personal solicitation, which the experience of years has shown to be most effective. For such a campaign it would have been necessary to be able to command a fair amount of time from the staff, for selling membership, like selling merchandise, is a business proposition, and can only be handled successfully by those who are thoroughly familiar with the merits of what they are trying to persuade others to buy. It was found impracticable, however, to detach members of the staff for this service except at odd intervals, owing to the pressure of other work, which was held to be of more importance—work, by the way, for which a smaller staff than usual was available, because of the absence of three of the regular employees on service overseas.

Recourse had to be had, therefore, to a campaign of circularization. For this purpose an attractively printed booklet was prepared, entitled "A Call to Action," in which were set forth such facts about the Association as a prospect would naturally desire to have, coupled with a recital of the advantages which membership would confer, and an appeal on patriotic grounds to support an organization that had so many achievements to its credit. This booklet was then sent to a select list of about 1,500 of the most promising prospects, and was followed up from time to time with other appeals, specializing on some particular feature of the Association's work, usually selected with a view to offering something of topical interest.

Later it was deemed advisable to invite the co-operation of the membership in calling upon prospects who had not replied, and to that end one or two energetic workers were chosen in every locality and asked to interview certain firms whose names were supplied them. It is a pleasure to be able to state that this call for assistance was very cheerfully met, and while it did not yield the results that were hoped for, it proved useful in enabling us to reduce our list of prospects to a better working basis.

It was the expectation of your Committee that, after the ground had been prepared by the distribution of the literature referred to, the services of the various Branch Secretaries could be utilized to gather in applications from people whose interest had been secured, but who, for one reason or another, had neglected to take action. So far as the Prairie Provinces Branch was concerned, both its committee and its secretary rose splendidly to the occasion; in fact, it might be more truthful to say that they needed no prompting, for of their initiative they undertook to secure 200 applications during the year, and they have done so. The Toronto Branch also did well; from its territory 115 applications were secured. In the other branches, however, we were unfortunate, due largely to conditions beyond our control. A permanent secretary was not secured for the Maritime Branch until February, and it was April before he had completed his training at head office. In the Montreal office a new secretary assumed charge in February, following the resignation of the former secretary after an absence from duty for four months in connection with the Government's Commercial Mission to France. All arrangements were made for the opening of an office in Vancouver in March, but the secretary engaged for that position, after two months' training in Toronto, left us to accept another position at a salary which we could not afford to pay.

But for these unlooked-for complications it is probable that the ambition of your Committee to report 500 applications for the year would have been realized. As it was, the actual number secured up to the first of June was 462. As against these it was necessary to accept 156 resignations, for the most part from firms that had gone into liquidation or that, for other reasons, had ceased manufacturing. The net gain to June 1st, therefore, was 306. The fees payable by the new

members secured amount to $6,080; the fees lost by reason of resignations amount to $2,055. The net gain in revenue, therefore, has been $4,025 up to June 1st.

In this connection it is only fair that the Committee take some credit to themselves for the applications that are still coming in as a result of the good seed they have sown. Properly speaking, the year under report ended on April 30th, when the membership stood at 3,239, as compared with 2,983 on April 30th, 1916. By May 31st, however, the figure had risen to 3,289. There is no doubt in the mind of your Committee but what this could easily be put over the 3,500 mark if members of the staff could be spared for a thorough canvass of Ontario, Quebec and the Maritime Provinces.

The following table shows the distribution of the membership in each province, according to the fee paid, as on April 30th last:

	$10	$15	$25	$35	$50	$100	$150	Total
Ontario	912	400	227	185	98	26	8	1,856
Quebec	344	183	79	63	63	16	11	759
Nova Scotia	47	16	7	8	1	2	1	82
British Columbia	40	7	5	7	3	1	1	64
New Brunswick	33	15	9	1	6	1	—	65
Manitoba	240	37	22	10	2	—	—	311
Alberta	35	7	3	2	—	1	—	48
Saskatchewan	48	3	1	0	—	—	—	52
Prince Edward Isl.	2	—	—	—	—	—	—	2
	1,701	668	353	276	173	47	21	3,239

It is simply a matter of multiplication and addition to figure out from the above table the potential revenue of the Association from membership fees:

1701	members	at $10	each	$17,010
668	"	" 15	"	10,020
353	"	" 25	"	8,825
276	"	" 35	"	9,660
173	"	" 50	"	8,650
47	"	" 100	"	4,700
21	"	" 150	"	3,150
				$62,015

On April 30th, 1916, it was $58,240; on the same date in 1915, $58,540; in 1914, $57,970.

The actual collections from fees in any year are usually considerably less than the potential revenue shown at the beginning of that year, by reason of the fact that included in the potential revenue are the fees of a number of members who may decide not to renew. At almost any time, for instance, there are probably 200 members on what is known as our arrears list, which is made up of those who are three months or more in arrears with their fees, or who have resigned, but whose resignations are being held over pending an opportunity for a personal interview. Until a member's resignation is actually accepted his name is retained on the roll, though no attempt is made, of course, to magnify the strength of the Association in that way, for a resignation is always put through just as soon as it is apparent that the member cannot be held. The cash collections this year, by reason of the large number of new members secured, are almost equal to the potential revenue shown at the beginning of the period, being $57,761, as against $58,240. If our present rate of growth is maintained for the next twelve months we should be able to collect in fees approximately $62,000.

Our object in calling attention to these figures is to throw light upon a situation that ought to be clearly understood when the proposals for increasing the membership fees come up for consideration. For reasons which the Executive Committee will probably explain, a substantial increase in the Association's income is necessary; to avoid doing the thing piecemeal, to put themselves in a position where they can meet any demand that is likely to arise, they have drafted a revision of the schedule which they calculate will yield an additional $20,000 per year. The following table shows how this result would be brought about:

No. of Employees.	Present Rate.	Proposed Rate.	Increase.	No. of members affected.	Gain in Revenue.
Up to 10	$10 00	$10 00	—	700	—
10 to 30	10 00	15 00	$5 00	1,001	$5,005 00
30 to 60	15 00	20 00	5 00	668	3,340 00
60 to 100	25 00	35 00	10 00	353	3,530 00
100 to 200	35 00	50 00	15 00	276	4,140 00
200 to 500	50 00	75 00	25 00	173	4,325 00
500 to 1,000	100 00	150 00	50 00	47	2,350 00
Over 1,000	150 00	200 00	50 00	21	1,050 00
				3239	$23,740 00

The other proposal that will come before the meeting is to maintain the rates as at present, but to give the Executive Committee power to assess up to 50 per cent. of the annual membership fee. On that basis the revenue for the past year, for example, could have been increased by assessment $28,880.

It is hardly to be expected that increases could be made effective by either plan without causing some resignations, so that the estimated gain in revenue would have to be discounted to some extent. When the schedule was last revised, in 1912, there was comparatively little trouble in securing the advance from firms paying the larger fees; what objection there was came mostly from those who were raised from $10 to $15, and from $15 to $25. One would, indeed, be a pessimist, however, who held the view that losses on that score would reduce the estimate by more than the amount by which it now exceeds the $20,000 at which the Executive Committee are aiming.

From an administrative standpoint your Committee are inclined to think that a straight increase in the fee will prove less troublesome than an assessment. A great deal of correspondence will likely be necessary in any event, but an assessment is always more or less difficult of explanation, especially to people who have an instinctive dislike for such things.

Providing an increase is put through on any plan that will secure the additional revenue desired, the resultant improvement in the service the Association is able to give should greatly facilitate the work of securing new members in the future, especially if that service is brought home to manufacturers in the Maritime Provinces and in British Columbia in the same way that it is now being brought home to manufacturers in these Middle Western Provinces. Upon the conclusion of the war we shall probably have to face a period of general retrenchment in business, a period that may severely test the strength of our organization. It stands to reason that we can best survive that test by providing a service which will make us an indispensable adjunct to every manufacturing business. To do this we must have ample funds, and we must not hesitate to spend them freely. For these reasons your Committee warmly support the proposal, sincere in the belief that it will work out in the best interests of the Association.

During the year your Committee have assisted in the revision of various branch and section by-laws, nearly all of which are now in fairly satisfactory shape. Only one new section has been incorporated, viz., that embracing the manufacturers of asphalt roofing, regarding which an appeal was taken to the Executive Council and dismissed.

The question of what constitutes eligibility for membership is always a difficult one to answer. Under the by-laws a great deal is left to the discretion of the Membership Committee, whose practice has been to avoid rules and definitions that might prove embarrassing, and to deal with each case on

its merits, with due regard, of course, to such precedents as might govern. Requests for rulings received during the year as to the eligibility of laundries and mining companies, as classes, were disposed of in this way.

Upon the recommendation of your Committee the Council saw fit to rule that any member in Class H (second representatives) absent from Canada on active service would be carried on the roll, pending his return, without the payment of any fee.

All of which is respectfully submitted.

J. A. Ross, *Chairman.* G. M. Murray, *Secretary.*

Discussion.

In moving the adoption of the foregoing report, Thomas Roden suggested the desirability of having the Secretary send out from time to time notices as to the scale of fees to be charged.

"There are some firms which are growing very rapidly," said Mr. Roden; "there are some firms with say 50 employees, and in the course of two years' time they have increased their factory up to 150 or 200. The matter is handled in the office and the principals are unacquainted with the terms on which they are members of the Association and a distinct loss to the Association is thereby incurred. If every year we sent out a list stating what these terms are, $10 for so many and so on, we might get an increased revenue that we hardly anticipate."

The motion was seconded by J. P. Murray, who urged that monthly leaflets outlining the activities of the Association, should be sent out not only to the membership but to firms whom it was desired should be brought into the Association. If it was good stuff to give to members, it ought to be good stuff to give to those who should be members.

THE NEW SECOND VICE-PRESIDENT

A Sketch of the Career and Business and Social Interests of Mr. T. P. Howard of Montreal.

Thomas Palmer Howard, the newly-elected Second Vice-President of the Canadian Manufacturers Association, is a Montrealer both in home and business relations. Born in Montreal, the youngest son of the late Captain Thomas Howard, he received his education in its institutions, being a graduate of the Montreal High School and the Montreal Business College. At an early age he entered the Montreal offices of the Grand Trunk Railway and after three years in the railroad business became connected with the iron and steel industry to which he has devoted practically all of his time since 1890. During the last twenty years he has been the guiding spirit of the Phœnix Bridge & Iron Works, an organization which, under his management, has grown from a small shop, employing a dozen hands, to a huge steel and iron construction corporation employing scores of workers, and doing in the neighborhood of a million dollars of business annually. In addition Mr. Howard is connected with several enterprises, among which are the Structural Engineering Co., Ltd., of which he is vice-president, and the Canada Envelope Co., Ltd., in which organization he is a director.

In 1906 Mr. Howard married Miss E. Daisy Taylor, a daughter of the late Mr. James W. Taylor, and their home in Westmount is the field of action for two sturdy boys.



—*British & Colonial Press photo.*

T. P. Howard
Phoenix Bridge and Iron Works, Limited, Montreal
Second Vice-President, 1917-18, Canadian Manufacturers Association

As a Club man Mr. Howard is actively associated with the Canada Club, the Engineers Club, the Manitou Club, the Kameron Fish and Game Club, and the Montreal Curling Club, which goes to show he is a popular man among men as well as a keen business organizer.

As a member of the Canadian Manufacturers Association, Mr. Howard has held some of the most important positions in that body. He has been a member of the Executive Council since 1909; Vice-Chairman of the Montreal Branch, 1913-14; Chairman, 1914-15, and now Second Vice-President of the Association for the year 1917-18. Unless something unforeseen prevents, the Association may look forward to having him as its President in 1919-20.

A PROMOTION.

Capt. T. E. Ryder has just received his promotion from the grade of lieutenant. He has also been awarded the Military Cross, and on more than one occasion has been mentioned in despatches. Capt. Ryder is the manager of the St. John House of the Canadian Fairbanks-Morse Co., Limited, on leave of absence at the front. He was, previous to the war, an officer in the St. John Battery. When the war broke out, he immediately enlisted for active service, and was attached to the Ammunition Column, Heavy Battery. Capt. Ryder is one of the many big-hearted patriotic men who are doing their bit for Canada and the Empire in the very thick of the battle.

LEGISLATION

THE year under review has offered your Legislation Committee abundant opportunities for work, as will be immediately apparent from the length of this report. It is with the hope that their efforts will meet with your approval, and that the results secured will prove beneficial, that they submit for your consideration the following summary of matters that have engaged their attention.

Extra-Provincial Corporation Licensing Acts.

The Association has endeavored throughout the year to protect the judgment of the Judicial Committee of the Privy Council in what are known as the John Deere cases, against circumvention by the provinces. That judgment, it will be remembered, strengthened and confirmed as it was by the judgment in the Bonanza Creek case and the General Reference, secured Federal companies in their right to transact business in any part of the Dominion without the necessity of having their powers amplified by any Provincial Government, and ruled as unconstitutional the disabling clauses of provincial statutes which would have denied an unlicensed Federal company the right of access to the courts for the protection of its business claims.

Notwithstanding the fact that the judgment seemed clear and explicit, there was a tendency on the part of some of the provinces to ignore it. Ontario and Manitoba, for example, have continued to call upon Federal companies for the annual fee required to maintain their provincial licenses in effect, in the expectation no doubt that as the fees were moderate, the great majority of companies would prefer to pay them rather than invite trouble by refusing to do so. Other provinces adopted the bolder course of claiming that they were not bound by the judgment, owing to the fact that their Act was of a different type from the British Columbia Act upon which the judgment was based.

The first plan of your Committee was to arrange for the bringing of test cases in Saskatchewan and New Brunswick. The Saskatchewan situation was an interesting one, because that was one of the provinces where it was claimed the John Deere decision did not apply. Companies are not incorporated in Saskatchewan by the issue of Letters Patent, but simply by the filing of a Memorandum of Agreement, which filing the Government demands of all companies attempting to do business in the Province. Before an Agreement can be validly filed, certain fees must be paid, and while it may be plausibly argued that there is a difference between this procedure and the actual licensing of extra-provincial companies, the purpose and effect are the same in both cases, and so far as a Dominion company is concerned, they are tantamount to a declaration that its powers have to be amplified before it can legally do business within the Province.

To cover the Saskatchewan situation satisfactorily, it was found necessary to institute three test cases, which were first heard by a Police Magistrate, from there appealed to a single judge of the High Court, and after that to the full Court en Banc of the Province. As was expected, the judgment in each case was an adverse one.

The plan to bring a test case in New Brunswick was abandoned, owing to the fact that the Legislature of that Province modified its company law by removing the features to which we took objection. It was then decided to arrange for test cases, if possible, in two of the other provinces and bring all the appeals before the Supreme Court of Canada at the same time. The object of this move was to avoid, if possible, the danger of securing a judgment based upon some technicality peculiar to the Act of a single province, which, of course, might be of little value as a precedent. By opening the matter up in a broad way, it was thought that the Supreme Court would be the more likely to appreciate the seriousness of the situation from the constitutional standpoint, and render judgments that would satisfy every demand in that respect.

Cases were accordingly brought in the courts of Ontario and Manitoba, and notice has been given in all three cases of the intention to appeal to the Supreme Court, where an effort is being made to have them all set down for hearing at the same time.



—British & Colonial Press photo.

Lloyd Harris
Russell Motor Car Co., Limited, Toronto,
Chairman, 1917-18, Legislation Committee, Canadian Manufacturers Association

Alberta Corporations Taxation Act.

While the above Act, passed in 1916, can hardly be described as an attempt to evade the Privy Council's judgment in the company cases, it may at least be said that it is an attempt to collect from the same business interests, by a new method, the revenue of which the Province was deprived by the judgment in question.

The tax is essentially unfair, in that it is computed on the basis of a company's authorized capital instead of its paid-up capital, for frequently the difference is very wide. It could not be taken exception to if it were levied with relation to the amount of capital a company actually employed in the Province, but insofar as it taxes capital, or the assets representing capital, employed or situate outside the Province, there are grounds for believing that the Act could be successfully attacked from the constitutional standpoint.

Some of its disability clauses perpetuate the objection that led to the extra provincial licensing acts being declared *ultra vires* with respect to Federal companies. One of them, for example, declares that a company, whose tax under the Act is not paid, is without status, and cannot maintain an action in any provincial court. Another clause gives the

Registrar of Titles power to refuse to register any conveyance, mortgage, or other instrument for a company until it produces evidence of having paid the tax. It is clearly beyond the power of the Province to enforce such measures against a company incorporated by the Dominion, and presumably the Alberta Government is aware of this weakness in its own Act, for your Committee have learned of no case in which disability has been pleaded against a Federal company where this form of defence has not been dropped. Needless to say, the Association would welcome an opportunity to conduct a test case on one or both of these features, but the disposition of the Government seems to be to avoid the issue.

Apart from these penalties, the Act is very similar to one which has long been on the Statute books of Quebec, levying a tax of one-tenth of one per cent. on the capital employed within the Province. The Alberta tax is only one-fiftieth of one per cent., but, as explained above, it is levied, not on the capital employed in the Province, nor on the total paid-up capital, but on the extraordinary basis of the authorized capital. The practice of your Committee has been to advise compliance with the Quebec Act, but to point out with respect to the Alberta Act that the Government has no means of enforcing payment from a Federal company, unless it has assets in the Province that could be seized.

Commission of Inland Trade.

Early in the year the Association was invited by the Retail Merchants' Association and the Wholesale Grocers' Guild to be represented on a delegation which these bodies were organizing to wait upon the Government for the purpose of urging the establishment of a Commission of Inland Trade.

Through a sub-committee which attended some of the conferences which preceded the interview, your Committee gathered that the movement owed its origin to two things; first, the investigations that had been commenced by the Minister of Labor under the price control Order-in-Council of November last, into the methods of merchandising practised by the wholesale grocery trade, particularly in connection with sugar, and second, the introduction of a bill into the House of Commons by Mr. Knowles, of Moose Jaw, to amend the Criminal Code by making it an offence punishable by three months' imprisonment or a fine of $5,000, or both, for any manufacturer, wholesaler, merchant or dealer to sell his goods under any form of resale price agreement.

This bill, if passed, would affect practically every trade-marked article or commodity that is nationally advertised as purchasable through the retail trade or through agents at a fixed price, such as automobiles, pianos, agricultural implements, canned goods, toilet preparations, and all kinds of grocery and hardware specialties. So serious was the interference which it threatened with the businesses of a great many of our members, that your Committee was deluged with letters, requesting that prompt action be taken to ensure its defeat. From the beginning, however, your Committee felt that the bill need not be taken too seriously, because of the fact that it went far beyond the policy which the Government itself had announced for the purpose of protecting the public against abuses of price fixing and exorbitant profits, and could only be made operative by over-riding an Order-in-Council which the Government was administering with a good deal of vigor.

Insofar as the price control Order-in-Council itself was concerned, your Committee recognized that the Government's action was dictated more or less by political necessity. In a matter of such great public concern as the steady advance in the cost of living, the Government could not afford to show itself indifferent to price maintenance agreements of any kind, and while the investigations it undertook were frequently disturbing to legitimate business, your Committee felt confident that in the long run those investigations would clearly establish the fact that many trade practices and agreements, which upon superficial examination appeared to be against the public interest, would eventually be shown to be not only justifiable, but in the real interests of the consumer, as providing him with articles of guaranteed quality and protecting him against fraud.

When the Knowles Bill came up for its second reading, the Minister of Justice requested the mover either to withdraw it or let it stand for the time being, pending the announcement of a proposal which the Government itself would bring down for the protection of the consumer. Owing to the political crisis the announcement of the policy which the Government intends to pursue in this matter has been deferred, but it may be assumed from the inability of the Minister of Labor to find anything to criticize in the practices governing the merchandising of sugar, that the Government has come to the conclusion that there are good agreements and bad agreements, good combines and bad combines, and that some trade practices which really contravene the provisions of the Criminal Code not only work no harm upon the consumer, but are themselves a valuable adjunct for the stabilizing of business.

It seems not unlikely, therefore, that the request of the Retail Merchants' Association and the Wholesale Grocers' Guild for the establishment of a Commission of Inland Trade will be acted upon. The function of such a body would be to pass upon any trade agreements or practices that might be submitted to it, and to place its seal of approval upon those which could be justified and which were found to be not against the public interest. In this way immunity from prosecution would be secured by those who contravened the letter, but not the spirit, of the law, and the law would be left to take its course against others whose combinations or agreements would not bear investigation.

Business Profits War Tax Act.

Although a good many complaints were lodged with your Committee by members upon whom the increases in the tax on business profits will fall very heavily, it was deemed unwise for the Association to be identified with any opposition to the proposals, because of the seeming certainty that its motives would be misconstrued. It appeared unlikely that criticism or opposition would prove successful in bringing about a modification of the tax under any circumstances, for the tax was undoubtedly popular with the great mass of the public whom it allowed to escape, and in whose behalf the press of Canada, Liberal and Conservative alike, congratulated the Finance Minister upon the wisdom of his proposals, and encouraged him to stand firm.

It is doubtful whether your Committee would have defaulted entirely in their duty, for evidences were not lacking that a strict enforcement of the tax would in some instances have driven into bankruptcy a firm that had served its country well. Happily the need for any intervention on their part was removed by information which came to hand to the effect that representations were to be made by certain Boards of Trade, who apparently were fully seized of every objection to the taxation from an industrial standpoint.

In view of the detrimental effect which a continuance of this form of taxation might have on the industrial future of our country, it is only proper that it be discussed on this occasion, in order that its operation and probable results may be clearly understood. For this purpose, we cannot do better than quote freely from the memorandum submitted to the Prime Minister and the Minister of Finance by the Board of Trade interests above referred to.

"To the principle of a tax on business profits," reads the memorandum, "we offer no objection. With Canada at war,

it is the common duty of all good citizens to help her win the war in whatever way they can. Money is just as essential to success in warfare as men. It is the duty of the Government to devise ways and means for securing the requisite amount of money, equitably if possible, but in any case expeditiously. A tax on profits is one means to that end, and a perfectly legitimate means so long as it is reasonably applied.

But great care should be taken to see that it is *reasonably* applied, and moreover, that it is not employed to the exclusion of other legitimate means of taxation. We believe that thus far those upon whom the business profits tax has fallen have paid it cheerfully, for one reason because they were well able to pay it. So far as they were concerned, it was reasonably applied, in the sense that it left plenty of encouragement for enterprise. Theoretically, it was open to criticism on the ground that it was discriminatory, in that it taxed only the excess profits of firms employing $50,000 of capital or upwards; those employing less than that amount escaped, as did also professional and other men in receipt of large incomes. There was a very general disposition, however, to accept the situation with good grace.

Excess Profits Tax.

Last year's taxation measure was essentially class taxation, but those to whom it applied responded readily, glad to be among the first to help bear the financial burden. The revenue thus collected, we are informed, considerably exceeded your expectations. The new proposals, instead of asking other elements of the community to do their share, make additional demands upon those who have already been called upon, and who, according to the returns, have done more than was expected of them.

It would ill become anyone, at a time like this, to demur in the performance of any duty his Country may ask of him, and true to that principle, the subjects of your taxation proposals are awaiting your final judgment, prepared to submit to whatever it may be. But on behalf of the general business interests of Canada, we feel it no less than our duty to express ourselves very frankly to you, first, because of our belief that by enacting these proposals into law, you would be dealing unfairly with enterprises that have deserved better treatment at your hands; and second, because of our firm conviction that no amount of revenue which this increased taxation of profits could possibly yield would compensate for the detrimental effect of such taxation upon the industrial future of our Country.

Capital Made Timid.

Upon the introduction of the tax on business profits a year ago, it was understood that it was to be operative for three years. While it may be true that no assurances were given that it would not be changed within the three-year period, the impression was created and allowed to gain currency that it would not be changed, and that if continued in operation after the third year, it would only be as one of various forms of taxation levied for the purpose of liquidating our war indebtedness.

Before the Act has been on the Statute Books one year, however, the Country is informed that the Government must increase its emergency revenue and proposes doing so by taking a higher toll on the same profits it has already seen fit to tax. We do not go so far as to say that this is a breach of faith, but we do say that, rightly or wrongly, capital regards it as a breach of faith. Present and prospective investors in Canadian industrial enterprises have had their confidence shaken, and are asking themselves, has the limit of the profits tax been reached, or will next year see still further increases? Mindful of the fact that the confiscatory feature of the tax is accentuated in the new proposals, they are perturbed, not without reason it must be admitted, lest another year see this objectionable principle carried further, and applied to back profits that have been disposed of beyond recall.

We are sure it is not the desire of your Government to discourage the investment of capital, either in the establishment of new industries or in the expansion of old ones, yet we have no hesitation in offering it as our opinion that the effect of this legislation will be to cause such discouragement on a wide scale. We are the more ready to do so because of information that has come to us of projected enterprises that have already been abandoned, enterprises for which the capital had all been secured and which would have been definitely gone ahead with but for the misgivings which these tax proposals have unfortunately inspired. Even from the limited enquiries which we have made there has come to us word of enterprises abandoned that would have meant the investment of at least $15,000,000 in manufacturing plants, details of which can be supplied in confidence if desired.

Capital is and always has been extremely sensitive to legislative tendencies, and however reasonable the intentions of your Government may be, capital will place its own construction upon Acts that tend in the direction of excessive taxation.

Our Sources of Capital.

It goes without saying, of course, that results such as those just mentioned are greatly to be deplored. A country like Canada, that has always been more or less dependent on outside capital for the development of its resources, can ill afford to place discouragements in the way of such capital coming in. On the contrary, her fiscal policy should at all times be framed with a view to the encouragement of capital investment, for it is only in that way that her enormous natural resources can be converted into wealth.

For the immediate future it is unlikely that there will be any inflow of capital from Europe, for Europe will require all the capital she can muster for her own rehabilitation. What was once an almost inexhaustible source of supply will therefore be closed against us. Under favourable conditions there would probably continue to be an inflow of capital from the United States, but the recent entry of that country into the war can only have the effect of reducing the amount it might otherwise have provided us. From the foregoing, it is clear that for some time to come Canada must aim to be increasingly self-reliant, and provide her own capital so far as it is within her power to do so.

Now the main, if not the only, source of domestic capital is surplus profits. A company with a growing business, which is content to pay only a modest dividend and apply its surplus profits to plant extension, is in an exceptionally favorable position to secure outside capital, for the re-investment of profits is the best guarantee that outside capital could have of the safety of the investment it is contemplating. But the proposed measure of taxation would close the door to both sources, by taking the profits which would otherwise be used for extension, and thereby removing the guarantee upon which outside capital would prefer to depend.

The Incentive to Enterprise.

That, however, is but one aspect of the unfortunate effect upon capital. If it is true that new capital will look askance at Canada as a field for investment, it is equally true that the incentive to enterprise will be largely removed from such capital as is already invested, if 75 per cent. is to be taken of all profits in excess of 20 per cent.

We are aware that this argument is ridiculed by the press and by the unthinking public, but in our opinion it is perfectly sound. It would not apply, of course, in the case of a business

attended by little risk, for where capital sees an almost sure return it is content with a comparatively small margin of profit. But under present day conditions, the hazards of nearly every line of business have been greatly increased, and it is a well-recognized principle that as the hazards increase, the prospects of reward must increase in proportion, if capital is to be attracted."

After a recital of the present day troubles incidental to manufacturing, the memorandum continues:

"With these and other difficulties certain to be encountered, any one of which, if not overcome, might make all the difference between success and failure, it is but natural for the manufacturer to hesitate. To begin with, he knows that success can be attained only as the result of ceaseless application and untiring endeavor. He might be willing to assume the risk and put forth the effort, provided the reward in prospect were commensurate. Certain it is that the greater the prospective reward, the greater will be the incentive to effort; conversely, anything which will detract from the harvest to be reaped where good seed has been sown will act as a brake upon effort. The manufacturer knows that if he makes a loss, he must bear it himself. He is now told that if he makes a profit he must contribute three-quarters of everything in excess of 20 per cent. Considering the risk involved under present conditions, hardly any venture would be justified that did not hold out good prospects of at least 20 per cent. profit; the reward, therefore, that would provide the real incentive would be the profits to be made in excess of 20 per cent. But of these your Government proposes to take three-quarters.

Under the circumstances, the business man will feel that he must deliberate the situation very carefully. He shrinks from exposing himself to the very real danger of a loss, yet he might be willing to do so if the success to be achieved were great in proportion. On the other hand, if he has the alternative of employing his plant and resources on modest undertakings that involve comparatively little risk, and hold out the almost certain hope of small but safe returns, he will probably prefer to adopt that alternative, particularly if he is acting as trustee for a body of shareholders."

Reference is next made to the depression which it is generally expected will overtake Canada when the war is over, and the desirability of the Government consciously encouraging manufacturers, instead of unconsciously discouraging them, to prepare to meet the situation. Continuing, the memorandum reads:

"Production and Thrift.

Such a policy would be in complete harmony with the production and thrift campaign which your Government has so consistently supported since the commencement of the war. Obviously, our best means of meeting the financial obligations imposed upon us by the war is to produce as much as we can, and to spend as little as we can. We want all the increased production we can obtain from our soil, from our mines, from our forests and from our fisheries, and we also want all the increased production we can obtain from our factories. You purposely encourage agricultural production by exempting it from war taxation. To this we offer no serious objection, notwithstanding the fact that it is discriminatory. But why discourage manufacturing production when it occupies a position of such importance in our industrial fabric? We recognize, of course, that your Government must have revenue, and that the profits from manufacturing production are a legitimate subject for taxation, but is it fair to ask them to bear so much of the burden, is it wise to levy so largely upon those profits that they will yield no surplus for capital extension? How can there be any material increase in manufacturing production without the employment of more capital? And how can more capital be employed if your Government appropriates it almost as quickly as it is accumulated?

While fully endorsing the principle of a reasonable tax on profits, we submit it would have been wiser, when additional revenue became necessary, to lay plans for securing it by the imposition of a tax on extravagance. People who spend their money on amusements, on indulgences and on luxuries are not practising thrift and are not, therefore, conforming to your Government's programme. Some scheme of taxation, devised to fall upon these practices, would serve the double purpose of yielding a revenue and checking the wasteful expenditure of money. Extravagance, in our opinion, is not taxed nearly as heavily as it ought to be, in times like these. In the best interests of the country as a whole, we think that production should be relieved of the necessity of bearing new burdens, so long as those burdens could be shifted to shoulders where they more properly belong.

Example of Other Countries.

The Minister of Finance, in announcing the increases in the business profits taxes, cited in their defence that they would still be less onerous than similar taxes in the United Kingdom, leaving it to be inferred that Canada might with safety approach, if not equal, the example set by the Mother Country in taxing profits.

But the cases are not altogether parallel. Under our Act, only 7 per cent. of the profits are exempt; under the English Act, as we understand it, the exemption for any particular business is fixed by taking the average of the best two of three years prior to the war. In some cases that might mean an exemption of less than 7 per cent., but in other cases it might mean an exemption of as high as 20 or even 30 per cent. The English Act now provides, we believe, for a tax of 80 per cent. on all excess profits, as defined above, whereas ours, under the proposed amendment, will take 75 per cent. of the excess over 20 per cent. It may well be, therefore, that our tax in its actual operation will sometimes prove more instead of less onerous than the English tax.

It should not be forgotten, moreover, that so far as capital is concerned, England and Canada are in entirely different positions. England, before the war, had vast reserves of capital which made her independent of outside sources of supply; regardless of any taxes which might be imposed upon her profits, she would still be able to provide for her own industrial expansion. Canada, on the other hand, who relied very largely on outside capital, now finds her supplies reduced to what she can save out of her earnings. Further, it may be pertinent to remark that if Canada can see an advantage for herself in taxing business on a more moderate scale than England has seen fit to adopt, if she can see an opportunity in such a policy of transferring to her own establishments work that would otherwise be done in other countries, she would be standing in her own light were she to follow England blindly and let the opportunity pass.

This, we submit, is a consideration of much greater importance than appears on the surface. Canada's principal competition after the war, as before it, will come from the United States, a country of immensely greater wealth than ours, a country whose industrial development is very much more advanced than ours, a country, moreover, which, as a result of long neutrality, has enjoyed more than two years of unprecedented prosperity. Her business houses to-day are possessed of great reserves of capital which place them in an excellent position to face the depression which we all feel sure will ensue upon the conclusion of peace. Canadian business houses will be at a serious disadvantage in meeting United States

competition if they are not fortified against a siege. But how can they fortify themselves, we ask, if these taxes are made operative against them?

The war taxation measures which the United States has recently seen fit to adopt furnish abundant evidence of a desire to distribute the burden in a more equitable manner than has been attempted to date in Canada. Out of a total revenue which she has set herself to collect of $1,810,420,000 from new taxes, only $200,000,000 is looked for from the taxation of excess profits. From spirits, liquors, and wines she expects a revenue of $150,000,000; from tobacco, $66,000,000; from automobiles, $68,000,000; from admissions, $60,000,000. We do not know what it is expected the increase in the Canadian tax on business profits will yield, but even were it your expectation that it would equal the total collections on the first accounting period of approximately $14,000,000, it would probably still be much less than the revenue that might be obtained from taxes similar to the few we have quoted from the United States budget.

A Tax on Efficiency.

Insofar as the new taxes represent a concession to public sentiment, which has been particularly outspoken in its condemnation of what it described as war profiteering, we think it only right to say a word in behalf of munitions manufacturing, an industry which is generally supposed to have created numerous millionaires.

Unlike other manufactured articles, munitions have been sold at prices which the manufacturers did not fix themselves, but which they had fixed for them; prices moreover, which have shown a steady tendency to decrease. They might accept or refuse the business as they saw fit. It is perhaps no exaggeration to say that 25 per cent. of them lived to regret having accepted it, for they lost money on it, some of them in fact were practically ruined. Neither is it likely any exaggeration to say that not more than 25 per cent. made big profits out of the manufacture of munitions. It is certainly correct to say that those who have made money have made it because of their efficiency. The successful munitions manufacturer has been the man who could turn out shells fully up to specification, in the quantities required and within the time allowed. It is to the men who have rendered this service that we are indebted for the enormous reserves of ammunition behind the firing line in France to-day, and instead of continually reviling them as war profiteers, the press and the public should acclaim them as men who by their resourcefulness and indefatigable efforts have helped to save the situation.

We do not suggest, nor have they asked, that they be exempt from taxation. They are quite prepared, we are sure, to submit to anything in reason. Their case, however, offers an exceptionally good illustration of how easily a tax on profits may become a tax on efficiency, and, to carry the illustration a little further, of how easily a tax on efficiency may drive the possessor of that efficiency into bankruptcy.

As previously stated, the successful manufacturer of munitions is the man who has been able to turn out goods that would pass inspection, in the quantities required and within the time allowed. The man who has shown himself possessed of these abilities has not lacked for orders. On the contrary, he has been singled out by the Board as one who could serve his country more effectively than his fellows, and under pressure from the Board, sometimes with its financial assistance, he has kept adding to his plant, putting up new buildings, installing new machinery, stocking up with materials as heavily as his resources would permit—all to the end that he might increase his production, speed up his operations, and perform the service for the Board at a lower unit cost. It has been characteristic of such manufacturers that they have paid out comparatively little in dividends; their profits as earned have been immediately put back into the business to provide for expansion and to secure protection against advances in the prices of necessary materials. On paper such firms have been able to show very substantial profits, but in many cases those profits are all locked up in assets that are far from liquid. Not only is it quite conceivable, therefore, that the cash demand which your Government proposes to make, for 75 per cent. of the profits in excess of 20 per cent., will frequently cause serious embarrassment, but some few cases are actually known to us where such a demand, if pressed, would virtually force into bankruptcy a concern which, according to the records of the Munitions Board, has served its country well. We ask in all seriousness, is it right, is it British fair play, that loyal and effective service should meet with such a reward?

It should not be forgotten that many firms whose paper profits have been large have been able to earn those profits by operating for twenty-four hours a day a plant which, under normal conditions, would not operate more than ten or twelve hours per day. The increased output thus secured has been the means of reducing the overhead and giving a lower unit production cost, the benefit of which the Board has never failed to obtain. This is the kind of efficiency by which the country at large most benefits. It is a form of efficiency, however, that calls for the employment of proportionately larger capital, because of the rapid depreciation of machinery and the necessity of providing renewals at practically double their ordinary price. Profits accruing from the operation of a plant under these conditions may be easily miscalculated, unless ample reserve is made for depreciation, yet frequently the real extent of the depreciation is not recognized until it is too late for the manufacturer to secure justice for himself in the administration of this Act.

Instances of Hardship.

In this connection we think it well to refer to a feature of the administration which, in the case of munition manufacturing, works out very unfairly and for which we think some remedy should be devised.

A company may commence an accounting period employing a capital of $100,000. By steadily putting back into the business the surplus on its turnover, it may conclude the year by employing a capital of $200,000. The percentage of earnings for the year, however, is computed on the basis of the amount with which the year was begun, not the amount with which the year was concluded, or the average for the year.

It also occurs to us to mention that the Act will operate with peculiar hardship against certain companies which prior to the war had a difficult struggle for existence, but which since the war have been brightened by the hope of getting themselves out of debt. Instances have no doubt been made known to you of companies which for years not only paid no dividends but which for a time were unable to keep up the interest on their bonds. To them and to their bondholders the war has been a deliverance, or rather would be a deliverance if their profits could be employed to wipe out their past indebtedness. We understand the practice of the administration, however, is to require the payment of full taxes on whatever profits have been earned during the year."

How the Situation Might Be Relieved.

Following this, certain suggestions are offered as to how the proposals might be modified advantageously from the standpoint of encouraging capital investment. On this point the memorandum reads:

"Our chief objection to the schedule proposed is that it is scaled up much too rapidly; on profits below 15 per cent.

the tax is one-quarter, while on profits above 20 per cent. the tax is three-quarters. We do not think that under any circumstances should the tax on surplus profits exceed 50 per cent. If a tax of that amount were made applicable, for instance, to all profits exceeding 50 per cent. or even 40 per cent., such action would in all probability secure you the loyal co-operation of all concerned. So long as a business man feels that for every dollar he is making for the Government he is making a dollar for himself, there is ample incentive to bring out the best that is in him, but that incentive is removed as soon as his profits have reached a point where he knows that additional effort and additional enterprise will yield him no return that he could not secure by investing his capital without risk, for that is virtually the position in which he would find himself if he had to make three dollars for the Government before he made one for himself.

Should you feel obligated, however, to retain the 75 per cent. tax, then we would earnestly recommend that the schedule be revised upon some such basis as the following:

Profit.	Tax.
Up to 7 per cent	Exempt.
7 to 35 per cent	25 per cent.
35 to 75 per cent	50 per cent.
Over 75 per cent	75 per cent.

We would not be rash enough to suggest that by retaining in this way the incentive to effort, the aggregate profits would be increased to an extent that would compensate you for the taxes you would forego. We do believe, however, that you would bring about a return of business confidence that would be immediately helpful to the country at large, and that would become increasingly helpful as we approach the period of uncertainty which the termination of the war will usher in. Coupled with this revision, we recommend that it be made clear and emphatic that there will be no further increases in the tax on profits.

If the loss of prospective revenue that would be occasioned by such a revision is one you would consider it necessary to recover, and if for the present the imposition of a tax on income is out of the question, then we believe you should have recourse to taxes on luxuries and indulgences, such as the United States has resorted to. By this means we firmly believe that for a comparatively small collection cost, you could secure a reveune far in excess of anything which the present proposals could possibly yield, in addition to which such taxes would have the beneficent effect of encouraging thrift and causing our people to realize, in a way they do not realize at present, that Canada is at war."

Up to the time of the writing of this report, there has been no announcement of any change in the tax proposals, though the Finance Minister has made it clear and emphatic that the tax on business profits will cease to operate after December 31st next, and will not be renewed.

Workmen's Compensation.

As forecasted by the Association some five years ago, the principle of compensating liberally for industrial accidents, regardless of questions of responsibility, is coming to be generally practised throughout Canada, notwithstanding the fact that at that time Ontario was the only Province that was even giving the matter consideration.

The Ontario system is one of compulsory mutual insurance administered by the State, with the risks divided into groups of a more or less homogeneous character. In the main this is the system followed by Nova Scotia and British Columbia, whose Acts came into operation during the past year, except that with the smaller number and smaller variety of industries, their groupings have necessarily been less homogeneous. The British Columbia system differs from the Ontario system in one important respect, however, in that it requires a small contribution from the workman, for the purpose of maintaining a sick benefit fund. This is an advantage, in that it causes every man to take an interest in seeing that the fund is properly administered, and that charges against it are not magnified by malingering. The Manitoba system is also one of compulsory insurance, but instead of the State collecting assessments and administering the fund, it merely acts as a director, approving companies with which employers may insure, seeing that all payrolls are insured to the requisite amount, supervising rates and adjusting claims. A bill very similar to this, but with the addition that compensation was to be payable in cases where the accident was due to the workman's own wilful neglect, was introduced this year into the Legislature of Saskatchewan. New Brunswick now has a Commission investigating the subect, with a view to recommending a system for that Province, with the probability that it will advise following the lead of Nova Scotia. Quebec was really the first province to abolish the old time defences and require the payment of compensation regardless of responsibility, but the system it adopted was one of individual liability, leaving the employer free to insure that liability or not, as he saw fit. It still follows that system, but its schedule of benefits is on a much less generous scale than prevails elsewhere.

The most important amendments made effective during the year were in Ontario. Heretofore, in that province, the charge for medical attention, nursing and hospital services had to be borne by the patient, the theory being that the benefits had been fixed upon a high enough scale in the first place to enable him to meet such expenses himself. Commencing July 1st, however, all such expenses become a charge on the group funds, in consequence of which it is expected the rates will have to be materially increased. Strong objection was made to this proposal by your Committee on the ground that with the State guaranteeing all medical bills, the tendency would be for charges to be exaggerated, thus leading to additional and unnecessary burdens upon the employer. On behalf of manufacturers, your Committee expressed willingness to have them made individually responsible for seeing that proper medical aid was provided, and they can only express their regret that their recommendations in this respect were not acted upon.

While there is room for a good deal of difference of opinion as to the best plan for providing compensation in case of industrial accidents, there can be no doubt that success in working out a reform of this kind can best be attained by creating an atmosphere of mutual confidence as between employers, employees and the administering Board. The operation of any scheme is certain to be attended by difficulties in the initial stages, but however serious these may be, they can always be overcome by a sympathetic administration which enjoys the cordial co-operation of all interests. Manufacturers have a sincere desire to see the principle of compensation put into successful operation throughout Canada, and they earnestly hope, therefore, that Provincial Governments will frame their Acts and shape their administrative policies in a manner calculated to inspire confidence, to secure co-operation and to promote harmony.

Alberta Factories Act.

In the closing days of the last session of the Alberta Legislature, a Factories Act was passed containing a number of provisions of a drastic character that would be humorous if they were not so serious. The following illustrations will suffice to show how ill-considered the legislation was, and how urgent is the need for amending it.

After defining the hours that shall constitute a day shift and a night shift, the Act debars overtime by stating that no

person shall be employed for more than one shift in one day unless the Inspector permits employment for a longer period on either shift for reasons of trade or commerce. The employer must heat the premises, but in no case shall the temperature be less than 60 degrees Fahrenheit unless authorized by the Inspector in writing. The Inspector may require any employer to provide a sufficient number of spittoons, and to keep them clean. Foundry employees must have the convenience of a shower bath, if they care to use it.

Under this Act the province even takes power unto itself to prohibit importations, for it declares that " no person shall sell, expose or offer for sale bread or buns manufactured out of Alberta without the written permission of the Inspector." It goes without saying, of course, that this provision is clearly unconstitutional.

Perhaps the most serious feature, however, is that whereby a minimum wage is established. Although the minimum is fixed at a fairly safe rate for present conditions, with reasonable allowances in the case of apprentices, the principle of a minimum wage is economically so unsound that your Committee felt justified in putting in a strong protest. In order that the argument may be clearly understood in case similar proposals are brought forward in other provinces, it has been thought well to reproduce a letter addressed to Honorable A. L. Sifton, Prime Minister of Alberta, by our Secretary, under date of March 28th. The letter read as follows:

" Re Minimum Wage Bill.

I have your telegram of the 26th, in reply to mine of the same date, in which you suggest that we authorize our Alberta members to examine the Bill, presumably with a view to making such representations as may be necessary under the circumstances.

On first hearing that such a Bill had been introduced, I wired one of our members in Edmonton as follows:

Principle of arbitrary minimum wage rests upon economic fallacy. Like any commodity offered for sale, price of labor will always be regulated by conditions of supply and demand. When Alberta minimum is lower than market price of labor in adjoining provinces the law is unnecessary and inoperative; when higher there will be influx of outsiders in numbers too great to be absorbed. Result is mass of unemployment with all attendant evils of destitution and vice. A province which always pays its labor at prices higher than adjoining provinces pay cannot help but impoverish itself. This type of legislation adversely affects interests of the very people it is designed to help. Minimum wage levels down; competitive wage levels up. Minimum wage encourages laziness; competitive wage encourages industry. Minimum wage stifles ambition by pulling energetic worker down to same class as less competent fellow; competitive wage stimulates ambition by recognition of merit. Minimum wage tends to restrict employment to young and robust who are physically able to give full value; competitive wage enables older and less hardy workers to share in opportunity of earning livelihood. Labor interests and legislators alike would be making great mistake in endeavoring to establish arbitrary minimum which pays no heed to merits of individual case but confers rewards on incompetent who have not deserved them and denies rewards to competent who have really earned them.

You will understand, of course, that this message was sent without having seen the Bill or knowing exactly what its provisions were, my thought being to furnish him concisely with the main argument against any minimum wage law.

I take this opportunity of expressing the hope that the views of this Association, as embodied in the telegram quoted above, will receive careful consideration at your hands. As representing perhaps the strongest association of employers in Canada, we would be the last to oppose any measure from a selfish desire to maintain wages at a low level, and I am sure you will give us credit for sincerity in making such a statement. What we object to is not the protection of working people in the matter of wages, but the tendency to create fictitious values, regardless of conditions of supply and demand. If the same principle was suggested in relation to the commodity which represents the labor of the farmer, namely, wheat, and a proposal were introduced, fixing a minimum price that anyone in the Province of Alberta would be permitted to buy wheat for, it would be obvious even to a person of the most ordinary intelligence that such legislation could not be worked out successfully in practice. We all like to see the farmer receive a high price for his wheat, because when he does so it means the country generally enjoys prosperity. Similarly, we all like to see our working people in receipt of good wages, because good wages are made possible only by business itself being in a flourishing condition. But it is impossible to induce a condition of prosperity by simply paying the farmers a higher price for their wheat than the ruling market prices outside the territory for which we are legislating; neither can we put business on a good footing by fixing a minimum wage below which no one shall be employed under any circumstances. On the contrary, at the very time when employment is most badly needed, the restrictions of a minimum wage law would tend to accentuate rather than relieve the problem.

As stated above—and let me make this point perfectly clear—what we object to is not the paying of high wages, but the attempt to fix wages by legislation. If the proposal now before your House were enacted, it is quite conceivable to us that manufacturing costs for our members in Alberta might not be advanced 1 per cent. Our objection, therefore, is not taken on the ground of any additional burden that would have to be borne as an immediate result of this legislation, but rather on the ground that the passing of this Bill would be the recognition of a principle which is economically unsound, and which, once recognized, would inevitably be extended to apply to other kinds of labor, accompanied by attempts to raise the minimum from time to time. In other words, we would look upon it as the thin end of the wedge, which, if driven far enough, would disrupt the industrial fabric of your province and lead to results which we are sure you would all regret. We need only refer to the fact that the legislation of one province tends to influence the legislation of other provinces to enable you to understand the apprehension with which we view the proposal now before your Legislature.

I trust you will pardon me in placing this Association thus strongly on record with you, but the matter is one about which we feel very keenly, and owing to the difficulty of getting personally in touch with you, I thought it best to voice our sentiments very frankly, trusting to your well known courtesy to give full and fair consideration to the interest we represent and only to take such action as the real merits of the legislation would warrant."

Bulk Sales Act.

This type of legislation, which has been in successful operation in our Western Provinces for some years, was repeatedly rejected by the Ontario Legislature owing to the opposition of the Retail Merchants' Association. This year, however, it was presented in a form which overcame the objections of the retailers, and the Bill was passed. Unfortunately, as the result of a clerical error that was unnoticed in the hurry of the final revision, the date for bringing the Act into effect was deferred a year, and unless the Attorney-General can discover some means of rectifying the mistake, it will be 1918 before the legislation really becomes operative.

Miscellaneous.

Under the Landlord and Tenant Act of New Brunswick the owner of a fixture sold under a lien agreement has no recourse against a landlord who might seize same for arrears of rent. A definite undertaking was secured by your Committee from the old Government that a Bill would be introduced to remedy this weakness in their Act. The matter is now being taken up with the new Government, who, it is hoped, will be found equally receptive to our recommendations.

Your Committee have heartily approved a suggestion submitted by Mr. David Robertson, K.C., of Walkerton, looking to interprovincial reciprocity in the matter of judgments. The whole question will be carefully reviewed in a memorandum that counsel is preparing, following which it will be taken up with the Canadian Bar Association, and the leading Boards of Trade throughout Canada.

Another matter to be taken up through the same channels is a plan of campaign to secure something like standardization of commercial laws among the various provinces, a subject by the way upon which we are to have the pleasure of an address from Sir James Aikins.

Your Committee have been pleased to endorse a resolution put forward by the Sherbrooke Board of Trade, calling upon Government Departments in the interests of larger competition and the protection of tenderers possessing limited means, to abandon their present rule of retaining the marked cheques of those who are awarded contracts, and to announce their willingness to accept as a guarantee for the proper fulfilment of the contract, the bond of a reputable guarantee company.

The policy of the Association in regard to daylight saving has been to support it as a federal measure, but to discourage independent action by provinces or municipalities, owing to the confusion and interference with business to which the latter course invariably gives rise. The Prime Minister has been advised accordingly, and urged to give effect to a nation-wide plan of daylight saving at the earliest possible opportunity.

All of which is respectfully submitted,

GEORGE C. COPPLEY, *Chairman.* G. M. MURRAY, *Secretary.*

Discussion.

In seconding the motion to adopt the report of the Legislation Committee, Mr. Douglas made the following remarks on the subject of taxation:

"The matter of taxation, which has been very exhaustively reviewed in this report, is a matter of first importance to the meeting. The report and the review thereof set the conditions very clearly before the meeting. In the opinion of a great many people at the present time the burden of taxation is not properly or equitably placed. At the present time the entire burden of taxation is resting upon the commercial and industrial community of this country. There is no objection, so far as I have been able to learn, on the part of any person to the amount of taxation that is being raised by this process, but there is serious objection on the ground that it is not an equitable tax.

"As I have already pointed out practically the entire burden falls upon the business community and on the commercial and industrial community. At the present time, in the opinion of a great many people, I think, the Government of Canada are not raising sufficient revenue. We are simply paying a percentage of about 10 per cent. of our war expenditure and by this process are placing a very great burden on the future development of the country. I do not think there is any objection on the part of those who have the tax to pay with the amount they are being taxed, but there is an objection that the tax is not being equitably distributed. As has been pointed out, there are those who have very large incomes from professions in the many walks of life; there are the brokers for example who have made harvests during the past months; and these are all immune from taxation. There is no reason why that condition should exist, and it is my opinion this meeting should not break up without some expression of opinion in regard to these matters.

"I presume the proper channel for this to be referred to will be the Resolutions Committee and have it come before them, but it does seem to me under the prosperous conditions of the revenue of this country at the present time, that a greater sum of money should be raised instead of a lesser one. The United States are endeavoring to raise a very large amount of money and they have only entered the war. They are proposing, I understand, to pay no less than 50 per cent. of their entire war expenditure out of the revenue; Great Britain to-day with her enormous expenditure is paying 25 and 30 per cent., while we are paying 10 per cent. The position this country will be in after the war will be that it will be a financial burden to raise the amount of interest which we will have on our debt. In addition to this we must provide a very large sum of money for the care of wounded and returned soldiers. No person can estimate what either of these is going to amount to, but it is going to be a fabulous sum after the war or before the war is ended. I see no reason personally why we should not have an income tax and have it on the whole community so that every person will bear his just share.

"Furthermore, we are endeavoring, and justly so, to encourage agriculture, but I want to point out that among the sections of this country to-day there is no section more prosperous than the farmers and they are contributing nothing whatever to the expenditure for war and munitions. There is no reason why we should not have a land tax. These matters should be distributed in such a manner that they will not be a burden upon anyone, and by such a distribution it is quite possible the large sums of money required to-day and the very much larger expenditures which will be required for war purposes can be raised without being burdensome to anyone. There is no objection on the part of anybody towards paying large sums of money towards war expenditure, but there is objection that it is not properly adjusted. These are matters, it seems to me, this convention could very well pass upon."

Mr. Chown: "In connection with the profits taxation bill, it seems to me the last clause in the report, stating that the Minister has officially announced that profits taxation shall cease at the end of this year, relieves us from the necessity of going largely into that question. I think the report is a very able one and covers the ground very efficiently, but still it seems to me that the announcement having been made it would be unwise for us to take any action looking to a change in the profits tax, and if you are to pass any resolution I would suggest it be along the line of the recommendation of a larger share of the costs of the war being paid by a tax on income and other taxes on indulgences as suggested in the report."

A considerable discussion developed on workmen's compensation, especially on the recent changes in the Ontario Act. Mr. Shapley repeated a suggestion made at one of the Executive meetings, that the manufacturers should endeavor to secure representation on the Workmen's Compensation Board, as a step towards securing more equitable treatment.

"The manufacturers," said Mr. Shapley, "are paying all the expense without a representative on the Board. It is

nothing but fair that those who pay the shot should be represented on that Board, and I believe it is time to commence to agitate very strongly for representation."

Mr. Shapley added that there was now no way of getting information about the Board's activities and that the Board, as at present constituted, appeared to be looking around for ways of paying out money. Both these deficiencies would be remedied if a manufacturer were appointed.

Mr. Parsons carried the idea still farther by saying that he believed a great many evils would be cured if the manufacturers were better represented in Parliament and public offices. To this suggestion, other speakers gave assent.

RETIREMENT OF GEORGE BOOTH

Appreciation of His Long and Worthy Services as Treasurer is Voiced at the Annual Meeting.

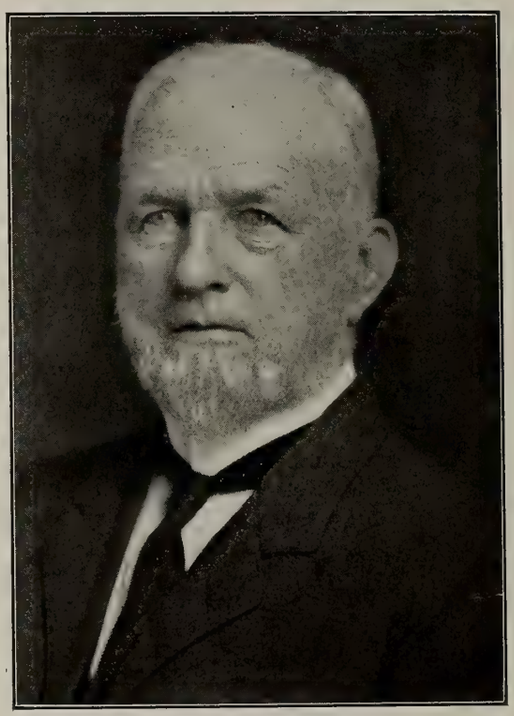
The retirement of Mr. George Booth from the position of Treasurer of the Canadian Manufacturers Association, a position which he has held with honor and devotion for many years, was announced at the Winnipeg meeting.

"If I may trespass upon my privilege as Secretary," said Mr. Murray, in reading the report of the Nominating Committee, "I would like to point out that the nomination by the committee of Mr. J. F. Ellis as Treasurer of the Association replaces Mr. George Booth who has been Treasurer of the Association for I think something like twenty years. Mr. Booth would no doubt be glad to continue in that office if he felt that the condition of his health would permit him. He requested to be dropped last year, but the annual meeting was unwilling he should be dropped and reluctantly he agreed to serve another year. This year he has insisted that his resignation be accepted. I would like to suggest, therefore, that in agreeing to the release of Mr. Booth from the office which he has filled for so many years that the occasion should be marked by a motion to be carried by this meeting recognizing in some tangible way the long and faithful service which he has given the Association."

The President: "I am sure that all who know Mr. Booth will feel very great regret that he feels compelled to relinquish his office. I know of no man so beloved by the members of the C.M.A. as Mr. Booth. We always think of him and speak of him in the most kindly manner possible. He has done a great service to the Association and I feel that if we carry out the suggestion of the Secretary it is the least we can do in a fitting way to set forth our views as to Mr. Booth in his retirement."

Mr. J. P. Murray: "As a member of the Association since 1892 and having had association with Mr. Booth in the capacity of Treasurer (my recollection is he was Treasurer at that time and has been ever since), I feel I perhaps have the privilege of asking that the Association will make a tangible recognition of Mr. Booth's services. I would like, sir, to move along that line, and that a small committee be appointed that will have that in charge to prepare a proper recognition of Mr. Booth, a recognition that will be in keeping with the dignity of Mr. Booth's service and in keeping with the dignity of the Association."

Mr. Roden: "I have very much pleasure in seconding the motion. All who have been associated with Mr. Booth for the many years he has been in Association work have learned to love him and recognize his integrity and his faithfulness to the Association. I think it is over thirty years he has been Treasurer of this Association. I have been now a member since 1900 and to my recollection he has attended every convention meeting and has given such faithful service we have never known how to appreciate it properly. It is regrettable that to-day we have to accept his resignation on account of his inability to serve further. He is an old man, old in business and in the service of the Association, and anything we can do will only be a very limited form of appreciation of his services, but it should be done with dignity to ourselves and proper regard for him and something which will give him a geat deal of pleasure for the balance of his life, which I hope will be prolonged for some time. We would like to have a committee appointed both from the East and West. The position of Treasurer is a very onerous position and the work has been done voluntarily. Mr. Booth has never had one cent of money for the work he has rendered, so that in that way we ought to do a little better, but I am asking on the plea of a man who has rendered faithful service and honorably discharged his duties. I have much pleasure in seconding the motion, and I hope we will have a very full committee of members from all parts to co-operate in the work."



George Booth
Booth Coulter Copper & Brass Co., Limited, Toronto
Retiring Treasurer
Canadian Manufacturers Association

The President put the motion, which was carried with applause, the appointment of the committee being left in the hands of the Secretary and President.

DETERMINING THE TRUE LENGTH OF YARNS.

The Bureau of Standards has been grappling with the fact that, owing to the elastic nature of yarns, it is difficult to determine their true length. The tension applied to straighten the yarn, for the purpose of measurement, increases its normal length. The bureau has, however, devised methods of computing the normal length of yarns from a series of measurements under various tensions. The tension necessary to produce this normal length may then be applied to all yarns of the same character, and the length measured with a relatively small error. This method is useful in determining the percentage of crimp in fabric yarns used for making automobile tires.—*Scientific American.*

INSVRANCE

THE efforts of your Insurance Committee during the past year have been mainly directed towards protecting the manufacturer in his right of free access to the market for unlicensed insurance.

The fire insurance business of Canada has for years been very largely controlled by two organizations, the Canadian Fire Underwriters' Association, operating in Eastern Canada, and the Western Fire Underwriters' Association, operating in Western Canada. These organizations have been maintained for the purpose of fixing rates, for the monopolizing of Goad's plans, for the propagation of non-intercourse agreements with and among their agents, and for other arrangements that bordered on, if they did not actually constitute, a conspiracy in restraint of trade. In their methods of doing business they have shown themselves to be arbitrary and discriminatory—characteristics that have led to frequent and bitter complaints from manufacturers who claimed to have suffered at their hands.

The policy of the Canadian Manufacturers Association, in dealing with such complaints, has been to intercede on behalf of the complainant with the underwriters in an endeavor to secure a satisfactory adjustment. Failing to obtain relief in that way, we have felt it our duty to remind the complainant that he need not consider himself as at the mercy of the Underwriters' Association, for recourse could always be had to licensed companies that were not parties to the Board or Tariff agreement, and failing help from them, to the unlicensed companies. It has never been the policy of this Association to ask that the associations of Underwriters be brought under control in any way. We have taken it for granted that they were quite capable of running their own affairs, and that if they deliberately chose to employ tactics and pursue methods calculated to antagonize their customers, it was nobody's concern save their own, so long as those same customers were not interfered with in obtaining a market elsewhere.

Affairs in the West.

Owing to the fact that until quite recently our own Association was not properly organized in Manitoba, Saskatchewan and Alberta, the Western Fire Underwriters' Association have long had things pretty much their own way, and they have turned the situation to their advantage by securing the enactment of legislation which places obstacles in the way of any business house attempting to use the unlicensed market. In Manitoba, for example, a tax of 50 per cent. of the premium paid is required of any firm directly effecting a contract of insurance, on any property in the Province, with a company not licensed or registered under the Manitoba Insurance Act. Providing the firm effects its contract indirectly, through a licensed broker, the tax payable is only one per cent. of the premium paid. In Saskatchewan and Alberta the tax payable is 50 per cent. in any case, whether the services of a broker are utilized or not. The Acts of all three Provinces contain a provision making it competent for the Provincial Treasurer or the Lieutenant-Governor-in-Council, on the application of any person, firm or corporation, to permit contracts to be entered into with unlicensed companies under such regulations and restrictions as may be deemed expedient and necessary, but this form of safeguard is theoretical rather than practical. The general effect of this legislation is to tax unlicensed insurance out of existence, and to create a monopoly for the benefit of the licensed companies and their agents, who, by agreements of one kind or another, have been able to eliminate the element of competition almost altogether.

In Eastern Canada, the market has always been kept open. Some five or six years ago a determined effort was made by the All-Canada Insurance Federation, to have the Dominion Insurance Act amended so as to provide for a moderate tax on unlicensed premiums, the amount suggested being 15 per cent., but the plan was defeated through the timely intervention of the Premium Payers of Canada, an organization which this Association was instrumental in helping to bring into existence.

This year, however, the matter came prominently to the front once more as the result of an investigation, ordered by the Ontario Government, into:

(a) The methods by which insurance companies registered or licensed by the Province, their representatives or agents, transact all classes of business except life and marine insurance, but more particularly fire insurance.

(b) The methods, rules, regulations and practices of all associations of such insurance companies, and associations of representatives or agents of such insurance companies, with regard to making, promulgating, enforcing or controlling rates, commissions, forms, clauses, contracts, or the placing of insurance.

(c) The existing laws of Ontario in relation to the foregoing and their practical operation.

(d) The existing laws of Ontario in relation to unlicensed insurance and their practical operation.

While we cannot speak with certainty as to the purposes which the Government thought this investigation might serve, we think it a reasonable surmise, both from the addresses which were delivered in the Legislature prior to the Government's action, and from the wording of the Commission itself, that it was ordered primarily in the interests of the consumer, who in this particular instance is the purchaser of insurance. The specific instructions to investigate the methods and regulations of the Canadian Fire Underwriters' Association would be readily explainable on the ground that those methods and regulations were thought to be burdensome upon the consumer, but hardly on the ground that the Canadian Fire Underwriters' Association was itself the aggrieved party and needed protection at the hands of the Government.

When the investigation was commenced, however, the Canadian Fire Underwriters' Association lost no time in adopting the attitude of a plaintiff, in the hope presumably that by a recital of its own complaints it might be able to avoid too close an enquiry into its manner of doing business. It went to considerable pains, therefore, to make it clear that the companies it represented had various taxes to pay and other items of expense to meet which unlicensed companies writing Canadian business escaped. In view of these handicaps it considered itself quite reasonable in asking that conditions be equalized by placing a tax on unlicensed premiums.

Prior to that time your Insurance Committee had taken little more than an academic interest in the investigation. A lengthy report had been submitted to the Commission by the Ontario Fire Marshal, in which a strong case was made out for the need of some form of rate control that would protect the purchaser of insurance against discrimination at least, but your Committee saw no occasion to intervene, first, because they had no confidence that any plan of control would prove effective, and second, because at that time they saw no real danger threatening the unlicensed market.

But when, at a later stage, the Canadian Fire Underwriters' Association deliberately raised the issue of a tax, your Committee felt themselves called upon to defend the manufacturer in his right of free access to the unlicensed market. It was quite obvious to them that one of the most helpful arguments

that could be employed would be to prove that the Canadian Underwriters were asking exorbitant rates and making arbitrary rulings, against which the manufacturer would be absolutely without protection if access to the unlicensed market were taken from him. Naturally this involved a direct attack upon the rates, methods and regulations of the Canadian Fire Underwriters' Association, and much as your Committee would have preferred to avoid such an attack, they felt they could not do so without proving seriously remiss in their duty to the membership of this Association.

Counsel was accordingly engaged, and a brief prepared in which the following submissions were made in our behalf:

1. That the control exercised by the Canadian Fire Underwriters' Association over fire insurance rates and terms had approached the nature and proportions of a monopoly.
2. The control had manifested itself in arbitrary ratings and rulings which were frequently discriminatory, and otherwise prejudicial to manufacturers and other property owners.
3. The practice of the Canadian Fire Underwriters' Association was not sufficiently sensitive to merit, and did not afford a proper incentive for fire protection work.
4. The only effective protection which the insured had against exorbitant and arbitrary rating was the competition of unlicensed companies, and to interfere with such competition would be to deprive the insured of his protection.
5. The proposal of a tax on premiums paid to unlicensed companies on contracts entered into outside the Province should not be entertained. Such a tax, if practicable and if within the powers of the Provincial Legislature, would seriously impede the competition of such institutions as the New England Mutuals and Lloyds.
6. In order to promote competition, the present tax paid by brokers on premiums for unlicensed insurance and the tax on fire losses, which was illogical and ill-advised, should be abolished, particularly in view of the fact that no such taxes were levied on the re-insurance effected by licensed companies with other companies that were unlicensed.
7. The control of the Canadian Fire Underwriters' Association over Goad's plans was inimical to the public interest and should be prevented, either under the Copyright Law or the law respecting combines.
8. Government control of rates would be very difficult to apply, and would not afford an adequate substitute for competition.

Evidence has been adduced, sufficient, we think, to substantiate all these points, but more evidence will be forthcoming if thought necessary when the sittings of the Commission are resumed next month. The general argument has not yet been presented, and until all the evidence is in, it will be difficult to forecast just what form it will take. It is eminently proper, however, as conducing to a better understanding of the whole situation, that your Committee should submit their views in detail before this meeting, and secure the benefit of your criticisms and suggestions.

The Buying and Selling of Insurance.

Under modern methods of business, insurance is not a luxury,—it is a necessity. It is the reserve asset that enables a business to recover and continue when its plant and stock-in-trade are unexpectedly destroyed by fire. Frequently it is the only safeguard under such circumstances against insolvency. Credit is so large a factor in business nowadays that the great majority of firms, especially corporate companies, have no option but to keep themselves adequately insured at all times. Were it know they were not doing so, they would probably be forced to purchase on the basis of cash with the order, and banking accommodation would be denied them. A corporation possessing very large assets, well distributed geographically, may sometimes be justified in not taking out insurance, or, as it is sometimes expressed, in carrying its own insurance. Similarly, an individual or a partnership, possessing resources far in excess of those employed in some particular insurable risk, may find that its credit is unimpaired by its refusal to insure. But these are rare exceptions, for it is probably no exaggeration to say that 90 per cent. or more of the manufacturers carrying on business in Canada have to purchase insurance. To all intents it is as much a necessity to them as coal or power, as unavoidable an expense as taxes.

It is this situation that has provided a place in the world of business for the insurance company. The scope of its activity consists in the fact that there are a number of enterprises anxious to enter into contracts that will insure them in the event of loss by fire. A few of them will probably sustain such losses and make demands under their contracts, but the chances are that the large majority will get through the year without loss. The function of the insurance company is to call upon each of them to put so much money into a pool, on the understanding that if it pays out of that pool all losses sustained, and in other ways administers the fund, it will be entitled to keep for itself, as payment for services rendered, anything that is left over.

Mutual vs. Stock Insurance.

In essence, all insurance is mutual; the premiums of the many are used to pay the losses of the few. The difference between so-called Mutual companies and the Stock companies is that the former put this principle into actual practice, and provide insurance at cost plus administration expenses, while the latter provide it at cost plus administration expenses, plus a profit to themselves.

Sometimes the Stock company may fail to realize a profit. If so, that fact may be cited as proof that the rates it quoted were too low, and as justifying an increase in rates the following year. Temporarily it may lose; if its loss is so heavy as seriously to impair its capital, it may have to go out of business. But if it continues in business it is in the expectation of eventually recouping itself out of the premiums it will collect from those it insures.

The objection that is ordinarily urged against strictly Mutual insurance is that it involves a large contingent liability which the insured may be called upon at any time to discharge, whereas under the policy issued by a Stock company there is no such contingent liability. This is true only within limitations, for, as explained above, it is the loss experience that governs the rate in any event. In the case of strict Mutual insurance the losses of any particular year are covered by the assessments for that year, unless, of course, there is a large reserve that may safely be drawn upon; in the case of Stock insurance the contract for the year is lived up to, but if there is a net loss the rates levied in after years are advanced in an effort to make the loss good.

For these reasons your Committee contend that in essence all insurance is mutual. The relation of the insurance company to the insured is simply that of a medium through which individuals co-operate to give each other protection. Some prefer to employ such a medium on a salary and take the chances themselves; others prefer to run no chances themselves but to let the medium make a profit if he can. In either case there is the element of gambling, and the man who gambles ought always to be prepared to take a gambler's chance. The Mutual insurer takes such chance, knowingly and willingly, when he buys insurance; sometimes he wins, sometimes he loses, but he always tries to protect himself as much as possible by carefully selecting the partners with whom he associates himself. The Stock company also takes its chance, not in buying but in selling insurance; sometimes it wins and sometimes its loses; but its ordinary method of trying to protect itself is to enter into an agreement with other companies to charge rates that will presumably be high enough to enable them all to make a profit. In other words, they want to gamble without gambling; or to use a colloquial expression, they want to bet on a sure thing.

The Market for Insurance.

Reverting to the necessity of insurance to everyone engaged in a manufacturing business, we think it will be obvious that it would be very unwise, very unfair, to deny the manufacturer the advantage of competition in buying what he needs must buy.

The markets to which he can now go to purchase insurance fall into two main classes—first, licensed companies, and second, unlicensed companies. The first class lends itself to subdivision, according as those companies operate under the rate agreement, through the C. F. U. A., or independently, like the non-tariff companies. The second class would comprise the Factory Mutuals of the United States, the Reciprocal Underwriters, Lloyds, and all those unlicensed companies to which access can be had through insurance brokers.

No records are available showing the amount of unlicensed insurance written in Canada, but of the licensed insurance, 85 per cent. is written with Board or Tariff companies, and 15 per cent. with Non-tariff companies.

The preference shown by so many manufacturers for licensed companies is due to various factors. In the first place, they are the only companies who can legally solicit business here, in consequence of which they have by far the best chance to secure the business, other things being equal. The fact of their being licensed is an indication that the Government looks upon them as financially reliable. Being domiciled in Canada, they can and do appeal for business on the ground that Canadians should support home institutions. Furthermore, in the event of trouble or litigation under any contract of insurance, they can be proceeded against more easily and with less expense than an unlicensed company. It is for this reason that banks, when demanding insurance policies as collateral, frequently stipulate that they shall be taken out with licensed companies.

In this connection it is pertinent to remark that insurance is something which the average manufacturer does not have to buy very often, and in the purchase of which he is unable to display the same acumen and judgment that he brings to bear on the purchase of the materials he is handling every day. He knows very little about the technicalities of insurance. His main anxiety is to be protected, and he usually relies on the insurance agent to secure him that protection at a reasonable price. In the majority of cases he probably does not know how his rate is made up, and if he did he could not intelligently criticize it, or compare it with the schedules of other manufacturers in the same line of business. If he should think the rate asked is high, he may invite competitive bids from other agents; if they represent Board companies, their quotation will be the same, if they represent Non-tariff companies they may cut the rate slightly. Unless his line is so large as to have made it worth his while to study insurance, he knows nothing about the facilities of the broker for giving him the benefit of wider and more open competition. This lack of knowledge, therefore, is another important factor operating in favor of the licensed companies.

The Injustice of Restricting the Market.

But the manufacturer having insurance of say $100,000 a year or more to place can ill afford to leave himself entirely in the hands of the insurance agent. Even at the rate of $1.00, his insurance would be adding $1,000 per year to his overhead, and this is too large an item to be allowed to pass without satisfying himself that he cannot do better. On casting about he may find that through a broker he can place his insurance in New York or London at a rate of 80 cents. Why should he not be at liberty to effect the saving of $200 per year thereby available, particularly if he offers the business to licensed companies at that rate and they refuse?

Or let us take the case of another manufacturer, who is compelled to cover himself to the extent of $1,000,000, and who finds that all the licensed companies put together will not write more than $500,000 on his risk. To him unlicensed insurance is an absolute necessity, for his surplus line at least. Suppose, for the purpose of argument, he were content to give the licensed companies all they would handle, would it be fair under the circumstances, would it serve any useful purpose other than that of providing the Government with a revenue, to subject him to a tax on such business as he had to send out of the country? If the licensed rate were higher than the unlicensed rate, would not that difference in itself on $500,000 of insurance be a sufficient tax for the manufacturer to have to pay?

To carry the illustration still further, what about the manufacturer whose risk the licensed companies do not care to insure at all? Insurance is just as necessary, for instance, to an oil refiner, as it is to a tanner or a woodworker, yet if the oil refiner desires to place his insurance in Canada, the probability is that either he will be told the companies do no desire his class of business or else they will quote him a prohibitive rate which they both wish and expect him to refuse. His only source of supply is unlicensed insurance, and it is neither right nor fair that restriction should be placed in his way of getting it. Nor is it right or fair, in our opinion, that restriction should apply either in the case of the man who sends only his surplus line out of the country, or the man who places any or all of his insurance with unlicensed companies in order to effect a material saving. And our reasons for so contending are—first, because it is absolutely necessary at times to utilize the market, owing to the inability or the unwillingness of licensed companies to handle the business, and second, because unlicensed insurance is the only effective protection the purchaser of insurance enjoys against high rates and unfair treatment.

Briefly expressed, the attitude taken by your Committee is that troubles of this kind cannot be successfully remedied by legislation. Both parties, insurers and insured, should be left to work out their own salvation. Whatever is wrong will right itself in time under a system of reasonable competition. There is no ill that the Canadian Fire Underwriters' Association is suffering, which a tax or unlicensed insurance would remove, except by working serious injustice upon the insured; there is no ill that the insured is suffering that cannot be remedied by an intelligent use of the unlicensed market.

No Inconsistency.

In arguing this, the Association will probably be criticized for what it will be alleged is its inconsistency. It will be said that we fight free trade in manufactured goods, and demand free trade in insurance. The insurance companies will claim that when they locate in Canada, and comply with Canadian laws, they are just as much entitled to protection against outside competition as the manufacturer is, and that if we champion the cause of tariff protection and appeal to the consumer to patronize home industries, we ought to practise what we preach by patronizing home insurance.

In answer to that the Association can say in all frankness that its members do desire to patronize Canadian insurance companies, or companies licensed in Canada. No better evidence of their desire is to be had than the fact that so many manufacturers continue to patronize them, even when they know they could effect a saving by going outside. Scores of instances can be adduced where manufacturers, after failing in repeated efforts to secure satisfactory rates from the C. F. U. A., and after receiving treatment at the hands of that organization that would almost have justified them in refusing to treat with it further, at any price, have come back with the lower competitive bid of the unlicensed companies, and

finally accepted licensed in preference to unlicensed policies when the C. F. U. A. showed a disposition to approach the unlicensed rate, even though it would not meet it. The policy of our Association is to encourage the placing of business in licensed companies, so long as they will provide proper covers at reasonable prices, but not otherwise. In adopting this attitude we are not advocating any deviation from "Made-in-Canada" doctrine that we would characterize as unpatriotic when applied to the goods we offer for sale.

Insurance Not a Proper Matter for Protection.

So far as the principle of protection is concerned, your Committee contend that the cases are in no way parallel. On this point they beg to quote from an editorial which appeared in INDUSTRIAL CANADA last November:

Both the insurance companies and the manufacturers are employers of labor, and in so far as the object to be served is to increase employment in Canada, the cases may be parallel. But there are certain important elements of difference. Before a manufacturer can become an extensive employer of labor he must provide himself with a building, install a power plant and equip it with machinery, all at an expense which means business to others, and which at the same time tends to anchor him, and to make him a permanent asset to the community and to the country. When he commences manufacturing he immediately becomes a purchaser of raw material; if he buys in Canada, that means more business for Canadian producers; if he imports, he contributes to the revenue of the country through the customs tariff. As his organization grows, he sooner or later reaches a point where he begins to export a portion of his output; in that case his enterprise gives Canadian labor a certain measure of dominance over foreign labor. An insurance company, on the other hand, is able to commence operations without any real stake in the country. A rented office will house its staff, and if business is unprofitable it can retire from the field without much sacrifice. It purchases no material which it advances in value before selling again, as the manufacturer does, and when it exports insurance, as it sometimes does, its market is with these same unlicensed companies to which it thinks the manufacturers should have access only upon the condition that they pay a tax.

Then, too, there is this very important difference. The manufacturer receives his protection under legislation that provides for its withdrawal whenever it becomes apparent that he is combining or conspiring with other manufacturers to secure undue advantage from the tariff at the expense of the consumer. Not only that, but he is subject to fine or imprisonment under the Criminal Code for combining in restraint of trade.

INDUSTRIAL CANADA might have gone further, and enquired upon what grounds would any government be justified in according protection to insurance companies unless it was prepared to accord similar protection to banks. Is there anything about an insurance contract that would make it a fit matter for protection, that would not equally characterize a loan or a debenture issue? Would it be proper to suggest that a joint stock company, that sells a bond issue in New York, should be taxed thereon when it is engaged in the patriotic work of bringing in outside capital to help build up the country? Would it be acceptable to the municipal corporation of Winnipeg, for instance, to pay a tax on the debentures it disposes of in London? If a loan of that kind is to be taxed, then why not a promissory note? Viewed from this standpoint, the proposition is so absurd that it carries its condemnation on the face of it.

Licensed Companies Not Subjected to Unfair Competition.

The licensed companies make out a plausible case for protection when they cite the taxes they have to pay, and the regulations they have to comply with, all of which, they tell us, the unlicensed companies escape. But this form of argument is plausible only, for upon closer examination it will be found that it does not hold water. True, the licensed companies have to maintain deposits at Ottawa and the unlicensed companies do not; but the latter have similar deposits to maintain somewhere, and there is capital tied up just the same in either case. Nor should it be forgotten that such deposits are maintained in the form of interest-bearing securities, the returns from which are regularly paid over to the depositors. True, too, that the licensed companies have to pay special war taxes on their income—taxes which our Government does not collect upon the Canadian income of unlicensed companies; but the taxation laws of England and the United States (practically the only two markets for unlicensed insurance used by Canadian manufacturers) are just as severe on insurance companies as the Canadian laws, so that the competitors against whom the C. F. U. A. asks protection do not enjoy immunity in this regard. True, still further, that the licensed companies, as good citizens, contribute to the Patriotic and Red Cross Funds, and pay their municipal taxes; the unlicensed companies may not make any contribution to Canadian coffers, but they make similar subscriptions and pay similar taxes in their own country, so it is difficult to see wherein they possess an advantage that enables them to underbid.

But even were it the case that licensed companies, as a result of these taxes, deposits, subscriptions, etc., had an overhead expense of from 5 to 10 per cent. to pay which unlicensed companies escaped, it would still be permissible to argue that they thereby secure certain advantages over their unlicensed competitors, which apparently are well worth the price. Some of these advantages have already been referred to in this report, and need not be repeated. If these advantages were not real there would be nothing to prevent the licensed companies surrendering their licenses and operating in Canada through brokers only. The fact that they continue their business in Canada under circumstances said to be so adverse, when they really have no stake in the country sufficiently large to hold them here, is fairly good evidence that they recognize and appreciate their advantages over unlicensed companies and that the unfair competition with which they have to contend is not the serious factor they try to make it out to be.

Control of Insurance Rates.

The Ontario investigation has developed one feature, which under the circumstances, was probably only natural. With the insurance companies on the one hand complaining that they were making very little money as the result of unfair competition, and with the insured on the other hand, complaining that the companies were demanding exorbitant rates and acting in a high-handed and arbitrary manner, a suggestion has been put forward that rates and competition should both be submitted to some form of control.

Your Committee are not impressed with the likelihood of any real relief being secured in that way, simply because it does not get at the root of the trouble. They cannot conceive, for instance, of any law which would compel an insurance company to continue in business at a loss, or to continue writing any class of business which its experience showed to be unprofitable. Control might be effective within certain limits as a means of doing away with discrimination where such exists; but under some circumstances it would be manifestly unfair to deprive the company of its discriminatory rights, as for example in the case of the moral hazard. Two risks might be to all intents and purposes indentically the same, so far as construction, occupation, protection and exposure were concerned, yet in the moral hazard they might be entirely different. No government bureau could probably afford, on political grounds, to recognize a difference in moral hazard as justifying a difference in rate. What, then, would be its policy in such a case? Would it order the company to write the undesirable risk at the same rate as the desirable

one? Would it have power to compel the company to write any risk against the company's judgment, or would it simply have power to compel the company to avoid discrimination? The simplest method in this case for the company to avoid discrimination would be to refuse both risks, and if other companies in the C. F. U. A. pursued the same policy, as they almost certainly would, then both risks would have to look for cover in unlicensed companies and submit to a tax. In that event, the very law which would be intended to protect insurance companies and secure fair treatment for the insured, would drive the business out of Canada and force it to pay a tax.

In the opinion of your Committee, the theory of rate control is visionary. If it were to yield results satisfactory to the insured, it would only be by the enforcement of orders which the companies would resent as impracticable, and which might ultimately cause them to retire from the field. If it were to yield results satisfactory to the companies, it would only be by the authorization of rates and regulations that would add to the burdens of the insured. In some of the States, where it has been tried, it has had to be abandoned; in others it has relieved the situation so slightly as to have been hardly worth while. And the reason for its failure is that it does not strike deep enough; it makes no provision for eradicating the fundamental trouble underlying the whole situation. That trouble is the enormous fire waste of this country.

Fire Prevention.

In the earlier portion of this report we laid stress on the point that all insurance is in its essence mutual. The premiums of the many are used to pay the losses of the few. When we read in the paper that a manufacturing establishment has been completely destroyed by fire, involving a loss of $100,000 that is fully covered by insurance, it is not the insurance companies that lose, but the premium payers of Canada. If Canada's fire loss for one year is $10,000,000, it is the premium payers who suffer; if the next year that loss is increased to $20,000,000, it is still the premium payers who, in the long run, have to foot the bill.

High insurance rates are the inevitable result of serious fire waste, just as surely as low insurance rates will come about as the result of a reduction in that waste. Manufacturers in England, France and Germany enjoy low rates simply because the loss ratio in those countries has itself been low. Canadian manufacturers will never secure relief from their insurance burdens until they grapple with this problem of fire waste and devise means for effectually reducing it.

The logic of this statement can best be appreciated from the relative per capita fire waste. In Canada it is $2.88; in the United States it is $2.55; in England it is 50c.; in France 55c.; in Germany 25c.

In the ten years from 1905 to 1915, insurance companies reporting to the Dominion Superintendent of Insurance collected premiums in Canada aggregating $207,094,419. Out of this amount they were called upon to pay losses aggregating $110,807,527. The loss ration, therefore, was roughly 53.50 per cent. of the premium income. With figures like these before us, it is more or less idle to speculate upon the possibility of obtaining relief from high rates of insurance by adopting a system of rate control. Rate control would not of itself reduce the fire waste, and the fire waste is the most important factor in determining what the rates must be. The expense ratio of Canadian companies, averaging perhaps 34 per cent., may be subject to diminution under more economical methods of administration, in which connection it is frequently alleged that the commissions paid to insurance agents constitute an unnecessarily high expense which is burdensome upon the premium payer. It is quite conceivable that a good deal might be done to effect a saving in that direction, which could eventually be reflected in lower rates, but a more noticeable lowering of rates would certainly follow if the fire losses in Canada could be cut in half.

There never was a time more opportune for the propagation of fire prevention than the present. In this era of high prices, when the duty is imposed upon every one of us to produce and to practise thrift, it is little short of criminal on our part to condone methods and appliances that result in the destruction of valuable property.

It must be apparent, even to the person of only ordinary intelligence who studies the problem, that a large proportion of the fires that occur in this country could and would have been prevented, had proper precautions been taken to guard against them. One of the most effective methods, which is at the present time easiest of application, is to have all premises properly and regularly inspected, preferably by trained firemen in uniform, with some authority behind them that could compel the correction of dangerous defects and the removal of unnecessary hazards. The work of fire prevention is of such importance that our municipalities would be fully justified in seeing that their firemen were specially trained for it by competent instruction, and encouraged to make it a life work having the status of a profession. Upon the principle that an ounce of prevention is worth a pound of cure, our municipalities should be paying much more attention to fire prevention than to fire extinguishment, yet in the vast majority of cases proficiency in the latter is the only thing that counts. The installation of heating apparatus should be safeguarded by strict regulations. Every winter we read of schools and other buildings that are destroyed by fire said to have been caused by an overheated furnace. Furnaces can be installed in such a way that there is practically no possibility of overheating. There should be similar regulations covering electric wiring and other electrical installation, and all such equipment should be regularly inspected by men clothed with power to order it to be put in proper repair if found defective. Plumbers and other workmen using gasoline torches and charcoal fires, should be compelled to undergo a qualifying examination before being permitted to use apparatus which has so often been the cause of serious fires. Canada might even follow the example of continental countries and penalize the owners of property upon which fires have originated from preventable causes, thereby endangering the property of their neighbors.

If our Provincial Legislatures would only apply themselves seriously to this problem of fire prevention, all the troubles of which insured and insurers alike complain would quickly disappear. In some of the Provinces a beginning has been made by the appointment of a Fire Marshal, and where this has been done, good results have been obtained. But progress is not being made as fast as it should, partly due to the limited powers under which these marshals are working, and partly to their unwillingness to exercise to the full the powers they have. The work calls for men who are more than mere investigators; they should be men of first-class organizing ability, and possessed of the kind of courage that will compel obedience to common sense practices and regulations. Your Committee earnestly hope that this meeting will see its way clear to bring the problem of fire prevention forcibly to the attention of all our provincial governments, for which purpose a resolution will be offered at the proper time.

Insurance Problems of the West.

But to revert to the matter of the tax on unlicensed insurance, the situation meanwhile is that such a tax is operative in Western Canada, but not in Eastern Canada. Our efforts this year have been exercised in trying to protect our eastern members against something which our western members are already suffering from. To be consistent, we ought to work

with equal zeal for the elimination of the tax in the West, for there can be no question but what it is responsible for unnecessarily high rates of insurance in this territory, to say nothing of the fact that the existence of such a law in any Province is always more or less of an invitation to other Provinces to follow suit.

Ontario manufacturers were not the only ones who had to defend themselves this year by reason of the example set by the West, for a bill was introduced into the Nova Scotia Legislature, that would have invalidated any contract of insurance on property within the Province unless the insuring company had an agent resident in the Province at the time the contract was made, and unless the policy was actually countersigned by such agent before delivery. Fortunately the bill did not pass, but the mere fact of its having been introduced is significant of the extent to which Canadian underwriters are prepared to go in their efforts to exclude outside competition. With such evidence before us, we should not be content to rely upon defensive operations only, but should wage an offensive for the purpose of driving the aggressor out of the stronghold he has obtained possession of. Our Prairie Provinces Branch, with the situation clearly before them, and with a resourceful and influential organization at their command, can handle the matter successfully if they will. Needless to say, the Insurance Committee will be pleased to help in any way that the Branch might wish.

As emphasizing the need for increased activity in insurance matters in the West, it might be mentioned that a few months ago the Western Fire Underwriters' Association circularized all fire insurance agents in these provinces, asking them to sign agreements with the tariff companies they represented, undertaking to operate in conformity with one of three schedules, designated as "A", "B" and "C", respectively. Schedule "A" provided for a commission of 20 per cent. on all preferred business, 15 per cent. on all other business, and contained a non-intercourse rule whereby the agent agreed not to represent any company which was not a member of the Association, nor to give business to any such company, unless he was unable to place the business with companies which were members of the Association. Schedule "B" provided for a commission of 15 per cent. on all business, but did not bind the agent to observe the non-intercourse rule. Schedule "C" provided for a commission of 10 per cent., and a small contingent profit commission.

This circular was followed up in all the larger places, such as Saskatoon, Edmonton, Calgary, Lethbridge, Medicine Hat, Moose Jaw and Regina by a visit from the Secretary of the Association and two other members. These gentlemen were successful in most of the places in forming a local committee, which consisted of the leading agents in each centre, with the object of bringing pressure to bear on all agents to sign Schedule "A" agreement. Agents who refused to comply with the request of the committees were threatened with the withdrawal of the agencies of the tariff companies which they represented.

In a number of these towns the local committees have been entirely successful, with the result that the Western Fire Underwriters' Association has been able to strangle the competition of the non-tariff companies just as effectively as the legislation it has secured has strangled the competition of the unlicensed companies. It needs no more than this to make clear to our western members the danger with which they are threatened, and the necessity for prompt and energetic action if they are to protect themselves against the inevitable consequences of a monopoly.

All of which is respectfully submitted,

W. H. Shapley, *Chairman.* G. M. Murray, *Secretary.*

FACTORY ACCOUNTING.

Factory Accounting. By Frank E. Webner. Chicago: La Salle Extension University. Price $3.30 post paid.

The science of factory accounting is still in its infancy, but it is growing with remarkable rapidity—so much so that a book on the subject may be modern and adequate when published and quite obsolete five years later. Recent improvements have greatly cheapened the process of accounting and supplied many mechanical aids which reduce the labor of collecting costs. Some of these are still unknown to the majority of accountants, and a more general dissemination of these newest ideas would do much to increase the efficiency of our factories.

This is the aim of a book which has recently been published by the La Salle Extension University. It is called "Factory Accounting," and is the work of Frank E. Webner, one of the best-known certified public accountants in the United States.

Mr. Webner's experience dates from the days when scientific accounting was unheard of except among some men of the most progressive ideas. In 1887 he installed a system of accounts for the dining-car service of the Chicago & Northwestern and later was connected with the Deering Harvester Company and with various live-stock and packing-house interests, and he was one of the pioneers in public practice. He has been a lecturer in the Universities of New York, Cincinnati, and Wisconsin; in Harvard, and in Pennsylvania State College. His book on "Factory Costs" has been a standard authority for many years.

The new book is a practical guide and not merely a reference work for experts. The style is easy and animated, and the explanations lucid and simple. More than eighty figures are inserted, most forms taken from the author's varied practice.

The chapter heads show the wide scope of the work. They are: Organization (Synthesis and Analysis, the Human Element, Responsibility, Charts); Controlling Accounts, General Exhibit, Current Exhibit, Cash Account, Purchases, Specific Orders, Process Production, Convergent Methods, Material, Labor, Expense.

A MEXICAN PUBLICATION.

State Department of Mexico Starts Publication of an Interesting Bulletin on Mexican Trade.

Through the courtesy of the Toronto Consular office of Mexico, we have been provided with a copy of the first number of the Consular Bulletin issued by the State Department in Mexico.

This Bulletin, which is a new departure for Mexico, gives much valuable commercial information, and if it keeps up to the high standard of the first issue will be a fine addition to the official publications of other countries. The Bulletin publishes the reports of the Mexican Consular Representatives, and circulates in Mexico and in all parts of the world where Mexico is officially represented. It is to be a monthly publication, and the subscription rate is $1.00 per year.

The Bulletin carries a certain amount of advertising, rates for which are: 4 cents per agate line 3" long for each insertion. For the guidance of any intending advertisers, the size of the page is 6 1/2" x 4".

The subscription for advertisements will be handled in Toronto by Mr. P. Tamayo, Consul of Mexico, Imperial Life Building. Mr. Tamayo will also be glad to furnish parties interested with further information pertaining to the book or to Mexico in general.

TARIFF

SINCE our last annual meeting the Parliament of Canada has made no change in the Customs Tariff. In the interval, however, two or three changes in favor of materials for Canadian manufacturers have been made by Order-in-Council; and, under the War Measures Act, all Customs duties were removed from wheat, wheat flour, and another wheat product, called "Semolina." These changes, which represent reductions in duty, are the only tariff changes made during the year. In other countries the tariff trend is still in the direction of increases.

In trade questions arising from the war, international thought has been focused on Customs tariffs as the most efficient instrument by which the resources of nations may be developed and their use controlled and directed. One result of the shfting events and constantly changing conditions throughout the three years of this terrible war, is in-



Geo. H. Douglas
Thornton & Douglas, Limited, Hamilton
Retiring Chairman, Tariff Committee, Canadian Manufacturers Association

tense conviction throughout the Empire that in the period preceding the war, the German Government deliberately took advantage of the freedom of British commercial laws and practice to acquire control of "key" industries so as to cripple the progress of British countries in peace, and prevent their development of facilities for turning out war munitions. It has been made terribly clear to every one that the nation which develops capacity to utilize all its resources, strengthens itself to the highest pitch against the possibility of national disaster. With the view to so developing their resources, the British Empire and Allied Nations, within the year, convened an economic conference at Paris, where the policies necessary to attain such development were determined upon. One important principle which was laid down by the conference calls for the control and development of resources by means of Customs tariffs. Another step in the same direction is represented in the report of a committee appointed by the British Government to investigate the entire subject, and which has recommended on trade relations, that:

1. In the light of experience gained during the war, we consider that special steps must be taken to stimulate the production of foodstuffs, raw materials and manufactured articles within the Empire wherever the expansion of production is possible and economically desirable for the safety and welfare of the Empire as a whole.

2. We therefore recommend that His Majesty's Government should now declare their adherence to the principle that preference should be accorded to the products and manufactures of the British Overseas Dominions in respect of any Customs Duties now or hereafter to be imposed on imports into the United Kingdom.

3. Further, it will in our opinion be necessary to take into early consideration, as one of the methods of achieving the above objects, the desirability of establishing a wider range of Customs Duties which would be remitted or reduced on the products and manufactures of the Empire, and which would form the basis of commercial treaties with Allied and Neutral Powers.

Announcement also comes from France that the Government of that country has taken measures looking to the abrogation of existing commercial agreements or treaties, the object being to acquire full liberty of action for carrying out the resolutions adopted at the Economic Conference of the Allies.

The great plan of Imperial and Colonial development by means of Customs tariff preferences for British products, and the further policy of specially favorable Customs legislation in order to stimulate trade with the Allied countries, coupled with the fact that almost every country has felt compelled to adopt large increases in Customs duties to obtain emergency revenue, seem to make it perfectly plain that general world-wide tariff readjustments, that will produce widespread international consequences in the development and progress of nations, must result from the war.

In connection with these matters, the question has been before your Tariff Committee as to the practicability of removing all Customs duties on importations into Canada of the products of the United Kingdom. The subject is of prime importance to labor, for any such removal of Customs duties could not fail to reduce the price of labor in Canada to the basis prevailing in the United Kingdom. Indeed, manufacturers operating very numerous industries in Canada would find it impossible to pay as high a wage rate as the manufacturer in the United Kingdom. Yet our more rigorous climate really makes it necessary that labor shall receive substantially higher pay in Canada—for the home costs more to build, to heat, and to maintain, and in numerous other directions the wage earner's expenses are greater than in Great Britain. Therefore, under such a fiscal policy, labor would inevitably be driven from Canada to seek employment in the protected labor markets of other countries. Another fact to be remembered is that the Federal Government of Canada must assure to this country an enormous annual revenue to meet its obligations. The proposal also needs to be thought about in the light of knowledge, that the Dominion of Canada would of necessity maintain her tariff against other countries, and, also, that foreign countries must continue their present policies of excluding importations generally except upon payment of substantial Customs tax-

ation. Without going into the details of other considerations, such as:

(*a*) In normal times the discrimination in favor of imported goods owing to the cheaper through freight rates from Europe to interior points in Canada as compared with the local rates on similar goods of Canadian production;

(*b*) The higher interest charges for money in Canada;

(*c*) The larger capital investment required to meet the greater cost of factory construction and operation owing to the more rigorous climate of Canada; and,

(*d*) The fact that revenue now derived on importations from the United Kingdom would have to be obtained by the Federal Government by direct taxation.

your committee considers it sufficient to draw attention to the fact that after the war the United Kingdom may still admit numerous products of foreign manufacture free of duty, whilst the same products when imported into Canada may be subject to Customs tariff dues. And if such imported materials, when advanced in manufacture in the United Kingdom, were admitted into Canada free of duty, the Canadian manufacturer of like finished articles would be discriminated against, and, being unable to compete, would be forced to close his factory. To illustrate: Before the war wire rods were imported into Great Britain in a large way free of duty and there made up into wire products. After the war the United Kingdom may still admit wire rods free of duty; and it is plain that with the wire products as made in the United Kingdom being sent into Canada free of duty, our own tariff on foreign made wire rods and other wire products would neither produce revenue nor assist in the maintenance and building up of Canadian manufactories in rods and wire products. The same discriminatory condition would apply practically in every line of industry, and would result in strangling manufactories in Canada. These same results would prevail generally under an extension of the British preferential tariff rate from the basis of the present average of 33⅓ per cent. preference, to a preferential basis of 50 per cent. Even under the present preferential tariff there are outstanding examples where materials not produced in the United Kingdom or Canada enter the former country free of duty, and are manufactured there into finished products, which are shipped into Canada under the preferential Customs rate of 22½ per cent., whilst the original materials if imported by Canadian manufacturers are dutiable at 35 per cent. If such discriminatory tariff rates were general, and they could not fail to be general under a tariff which would admit the manufactures of the United Kingdom at one-half the Customs rates applying against the same goods imported from other countries, there would be a widespread strangling of manufacturing industries in Canada. Before leaving this subject it seems worth while to recall the fact that the preferential tariff rates of Canada encourage and stimulate the importation of British products by providing specially low Customs dues, averaging one-third lower than the Customs dues payable on similar goods not British—without any resultant advantage as a rule to exports of the products of Canada to other parts of the Empire. New Zealand, British South Africa, and certain of the smallar British West Indies, grant tariff preferences to certain Canadian products. But, the products of the Dominion of Canada receive no tariff preference over foreign goods in the markets of Great Britain, Newfoundland, Jamaica, India, Ceylon, the Straits Settlements, Australia, Egypt, and numerous smaller British countries. In the opinion of your Tariff Committee the fiscal policy needed for the upbuilding and welding of Empire countries is the general adoption by all British countries of tariff preferences for Empire products corresponding to the preferences which are granted to Empire products under the tariff of Canada. Your committee, therefore, expresses the earnest hope that arrangements may be consummated whereby the products of this country may find entrance into all British countries under substantial tariff preferences.

The outlook for the future, in your committee's opinion, makes it most necessary that the government should utilize the country's ablest business men, whose experience would be invaluable in discussing and advising on these matters so directly affecting the future welfare of this Dominion and the Empire.

Exports of Canadian Products.

The prosperity which now prevails in Canada has unquestionably been superinduced by alert measures of the government to promote exports of Canadian products. The continuance of favorable export conditions, both for manufactures and products of the soil, cannot, your committee believes, be too jealously protected, for without such conditions we can neither attract the immigration we so much desire for the development of our country, nor can we provide the returned soldier, to whom our obligation is so great, with the proper opportunity to re-establish himself in comfort.

The Canadian drawback regulations appear designed to furnish the equivalent of practically duty-free materals for manufacturing for export. If there were no manufacturing for export there would be no imports for that purpose, and no payment of duties; and, therefore, in respect to duties on materials imported to be manufactured and exported the government loses no revenue by granting the drawback on proof of exportation. Because the present drawback facilities do not go nearly as far as the export facilities afforded by some of the great trading nations, we suggest enlargements of the present drawback regulations, as follows:

(*a*) Where imported duty-paid materials are actually used and necessary as materials in manufacture, but which cannot be found in the ultimate product, as in the case of fluxing materials used in metallurgical operations, chemicals used and lost in processes of refining, etc., drawback to be allowed on proof of exportation of the manufactured product.

(*b*) In the case of the Canadian manufacturer who regularly uses domestic materials as in the manufacture of white lead, ant who could only compete for foreign trade by using imported pig lead subject to drawback, and who, therefore, cannot engage in the export trade because of the necessity to make prompt shipment on foreign orders; drawback to be allowable conditional on its being established that such manufacturer actually paid duty on the quantity of the said material needed to make the product exported, even although such duty-paid materials were purchased concurrently with the sale of his product for export and immediately imported and entered for consumption.

Trade Commissioner Service.

So far as the Dominion of Canada is concerned the Trade Commissioner Service directed by the Department of Trade and Commerce, represents the only source of original information on foreign trade openings which the government communicates to business men. In the past the Consular Service of the United Kingdom has exercised but little influence on Britain's foreign trade interests. The failure to develop this service for the promotion of British international trade contrasts with the high efficency of the Consular Trade Services of two commercially alert nations like the United States and Germany. These conditions have been recognized by commercial bodies in the United Kingdom who have asked the Imperial Government to reorganize the British Consular Service so as to constitute it a world-wide expert commercial force for the promotion and extension of British international trade. That the British Government has given heed to these representations is shown by instructions issued recently by the

British Government to His Majesty's Diplomatic and Consular Officers, which appear in Appendix B to this report. An important facility would be furnished for the enlargement of Canada's export trade if arrangements could be perfected whereby the Government of Canada would be furnished direct with copies of all general and confidential reports of the Consular Service on trade matters. These reports could be dealt with by the Department of Trade and Commerce, Ottawa, in the manner best calculated to promote the foreign trade of Canada. Should such an arrangement not be possible your committee believes the government should be urged to consider a wide extension of the Trade Commissioner Service of Canada. It may be pointed out that if the government thought it desirable this trade service could be made self-sustaining in the same way that the United States Trade Service is made self-sustaining—that is to say, by the Customs of Canada requiring all invoices of goods shipped into Canada to be certified before a Canadian Trade Agent and charging a suitable fee for such certification.

Domestic Development.

The lack of informative data on the extent of the imports of definite articles renders it practically impossible to answer very numerous inquiries or to make suggestions as to what further products ought to be manufactured in Canada that are now being imported. To cover this field your committee submits that an office is needed at Ottawa which could furnish exact statistics of imports of a given article. The Customs statistics of imports would answer the purpose if the figures were obtainable in detail for each principal article imported. Whilst Canada's statistics of import trade appear to be in greater detail than the import statistics of other countries, nevertheless, the statistical headings in most cases cover such very general groupings of commodities under one classification that they do not throw clear light on the respective articles which are being imported which ought to be made here. It appears it would not be necessary to enlarge the Customs Trade and Navigation Returns for the purpose of showing these further trade details. If in recording the statistics from the Customs entries it could be arranged for the statistical clerks to separate the imports under each general heading according to sub-divided headings, which the Canadian Manufacturers' Association would undertake to furnish, statistics would be available which would be enormously helpful to the development of Canadian industries.

Anglo-Portuguese Treaty.

An Anglo-Portuguese Treaty became effective from September 23rd, 1916. Canada has given notice of adhesion to the treaty; and very soon arrangements will be completed whereby certain Canadian products (listed in Appendix C to this report) will be entitled to enter Portugal at the lower conventional tariff rates provided in the treaty. In return certain Portuguest products will be entitled to enter Canada at the intermediate tariff rates mentioned in the Franco-Canadian Convention. A notable provision in the treaty is a mutual agreement, "that, if in pursuance of the conclusions arrived at at the Economical Conference at Paris, any fresh international arrangement is proposed by either Great Britain or Portugal, neither party shall offer any objection based on the existence of the treaty."

War Measures Embargo Against Exports.

During the year some changes have been made in the list of prohibited exports. There is general whole-hearted loyalty to the need of embargoes to assist in protecting the Empire's supplies. But it should be realized that nothing can be further from the intention of the government than to effect the closing down of any domestic industry through the enforcement of the embargo so long as the granting of relief would not detract from efficiency in furnishing supplies for the prosecution of the war. In all these matters the advice of the Tariff Committee can be obtained by any member interested.

Embargoes of the United Kingdom Against Imports and Exports.

The export prohibitions of the United Kingdom hamper numerous lines of Canadian manufactures by cutting off the sources for supplies needed in carrying on manufacturing operations. But on the facts of each case being laid before the British authorities through the channel of the Trade and Commerce Department, presided over by the Right Honorable Sir George E. Foster, relief has been obtained except where the supply in Great Britain of the material sought after has been inadequate to meet their own needs.

As to the prohibition against imports, these have substantially retarded exports of Canadian manufactures in lines other than war munitions and supplies. But the lack of ocean shipping space is a condition which must be recognized as necessitating some form of restriction on the shipment of non-essentials.

Customs Rulings.

The Tariff Department has reported the Customs rulings which will be found in Appendix A, all of which have received the consideration of your committee. Members of the association who were affected by these tariff ratings were written to and in addition full announcements thereof were made in INDUSTRIAL CANADA.

Special Tariff Information.

In closing your committee believes it worth while to recall the fact that membership in the association entitles each member to the services of the Association's Tariff Department without charge. To this Department of the Association members may appeal for information on foreign and colonial tariffs and Customs regulations; and for assistance in regard to the Customs law of Canada and its interpretations. Questions of valuation for Customs purposes, of error in Customs entry, of drawback of duties, of refunds of duty overpaid through error, of the prohibition of goods having the taint of prison labor—as to these, and any other questions bearing on the Customs, your committee once again place the Tariff Department wholly at the disposal of each member of the Canadian Manufacturers' Association.

All of which is respectfully submitted.

GEO. H. DOUGLAS, *Chairman.* J. R. K. BRISTOL, *Manager.* G. M. MURRAY, *Secretary Tariff Department.*

Discussion.

Several matters were referred to by members in discussing the report of the Tariff Committee.

Mr. Robson (Edmonton) asked the pertinent question, What stand will eastern manufacturers take in case their interests seem to conflict with the farmers of the prairie provinces? He dealt particularly with the question of agricultural implements, pointing out that the American farmers in the Canadian West naturally preferred American machinery and wanted to buy it as cheaply as possible.

Mr. Roden, in reply, said: "The question of tariff is always one that affects the farmer. The farmer always feels,

and not only the farmer but oftentimes the industrial class feels that the tariff goes into the manufacturer's pocket. Nothing is so absolutely incorrect as that viewpoint. Tariff is largely used to equalize wage conditions and, as industries develop in Winnipeg, they will find that after they have supplied their local needs they will require to get some world market and immediately they come in contact with world conditions and wage conditions that will be a question that will affect them. They will want to expand, and if they can get a larger business for their surplus products they can hope to send their products to other countries or control the market here. We are looking to the western man to educate the farmer as to the necessity of the tariff, to remove from him the prejudice against tariff and to advise with him just as to how they can harmonize that.

"On the question of machinery, we must confess that we are exporting all over the world large quantities of agricul-



J. R. K. Bristol

Manager, Tariff Department, Canadian Manufacturers Association

tural machinery, and I presume we have not the facilities for the exportation of that machinery that the American manufacturers have, and yet we have that market outside of Canada. It may be only prejudice we have to overcome. It may require pressure and a little education to overcome that prejudice, but it is the duty of those on the spot to educate the farmer, because we all realize that the larger the local consumption is the better for everybody. We are resting on you western gentlemen to fulfill your duty towards the farmer with reference to this particular attitude."

Mr. Deacon (Winnipeg), after pointing out that the western market was too small to admit as yet of the establishment of any large industries in the west, said that the trouble was that the western farmer did not believe that the eastern manufacturers were exporting goods to other countries. Steps should be taken to show that this export trade actually existed.

Mr. White (London) sympathized with the preference of American farmers for American machinery, but pointed out that the machinery made in Canada and the United States was identical. So far as knowing about the export trade was concerned, if the Grain Growers' Association and the various farmers' associations had tariff committees, they would soon know the exact situation.

"There are a great many of the grain growers and farmers who think that the agricultural implement and threshing machine men have a great deal of protection, when the fact of the matter is we have none," said Mr. White. "On threshing machinery, we have 70 per cent. of the price that it is sold on, that is 20 per cent. on 70 per cent. of the price it is sold at in the United States, bringing the duty to 14 per cent. net. We are the last in a long line of manufacturers between the ore and growing tree on one side and the final consumer on the other. That line of industry is between these two points. There may be fifty—brass goods, wheels, belting, cotton, duck, steel, materials manufactured from steel and all along the line; all these industries have a protection of from 27½ to 35 per cent.; the manufacturers of agricultural machinery pay the duty on raw materials that enter into the construction of the machinery they manufacture irrespective of whether it is purchased in Canada or United States. 14 per cent. net is the protection we enjoy. We absolutely have no protection.

"The grain growers at Ottawa, some of them, made the statement that they would like to see a true statement of how much material for construction in the manufacture of farm machinery and threshing machinery was brought into Canada free of duty. I can state positively, except in the case of export, there is not one dollar brought in free of duty. Of course, just now, we are under abnormal conditions on account of the war, but it hits the agricultural machinery manufacturer probably harder than anyone else. We have our steel trebled in price; we have to pay 7½ per cent. war tax as well as the regular duty on these articles coming in from United States. We get our regular 14 per cent. net protection on the goods we manufacture. 7½ per cent. war tax is figured on the present price. You see what that means. Steel that could be purchased (I speak of that because it covers every other article), bar steel for general use in the manufacture of these machines two years ago was two cents a pound, or $2 a hundred, and was purchased considerably lower. Now a great deal of this is $7 to $12 a hundred, and we pay 7½ per cent. war tax on that advanced price. It means a great deal to the manufacturers of agricultural machinery and threshing machinery.

"I would like very much to see the grain growers have a Tariff Committee that would look into these matters and they would see for themselves that the manufacturers of agricultural machinery which they buy do not enjoy the privilege of bringing in their raw material free as a great many of them think we are doing."

Another line of discussion was introduced by Mr. Ferguson, of Woodstock.

"What are the views of the Tariff Committee in connection with the exportation of nickel?" he asked. "The C.M.A. should make some report on this question, which is very vital to the country and to the Empire."

Mr. Deacon, of Winnipeg, did not think it the proper time or place to deal with the question.

"I don't think we should try to deal with any individual article at the present time," said Mr. Deacon. "We ought, sometime before this convention closes, to pass a resolution strongly urging the Federal Government to adopt a strong definite policy for the development and utilization to the

best effect of all of our natural resources by converting them from raw material into exchangeable wealth and retaining the largest proportion of that profit possible in this country. We should not deal with them singly now."

Mr. Parsons thought it would not be wise to go too far in asking for the prohibition of the export of raw products. He pointed out that there was hardly a manufacturer present who used Canadian raw materials exclusively, and it would be a serious matter if the United States should cut off these supplies.

APPENDIX "A."

Board of Customs Decisions.

Tapered logs, eight sided, not further manufactured than sawn or hewn, declared to be entitled to entry under tariff item 503.

Sapphire meter jewels, cupped for bearings, but unset, declared to be dutiable under tariff item 648, in effect from 1st April, 1916.

Colored silk yarn, per sample, declared to be entitled to entry under tariff items 577 and 740, when imported for use as specified in said items.

Violet ray high frequency generators, declared to be dutiable under item 453.

Matrices required to produce one page in colors, declared that each separate matrix imported is subject to duty on its own measurement.

Locomotive axle forgings, rough turned, declared to be dutiable under item 392.

Cooked corn grits, per sample, found to be not fit for human food in condition as imported, declared to be dutiable under item 711.

Polishing cloth, per sample, marked "Dazzle," declared to be dutiable under item 562.

Delphos printing press, Model A, declared to be dutiable under tariff item 442.

Bisleri bitters, per sample, declared to be dutiable under tariff item 156.

Book entitled "Farmer's Veterinary Guide and Atlas," per sample, declared to be entitled to entry under item 172.

Dried peaches, in air-tight tins, declared to be dutiable under item 93. Rate of duty 25%, plus the war tariff of 7½% *ad valorem.*

"Sheraduct" conduit pipe, per sample, when under four inches in diameter. Ruled to be dutiable under tariff item 399. Rate of duty 35%, plus the war tariff of 7½%.

Insulating pad, composed of hair, felt, asbestos, and other materials, per sample, from the Keystone Hair Insulator Company, Pittsburgh. Ruled to be dutiable under tariff item 192. Rate of duty 25%, plus the war tariff of 7½% *ad valorem.*

Basic sulphate of lead, sulphate of lead, or sublimed lead, declared to be dutiable under tariff item 711.

Combined metal melting furnace, and plate-finishing and drying machine (per illustration) for newspaper work, from R. Hoe & Company, New York, declared to be dutiable under tariff item 441.

Broomless floor sweeper (per illustration), and dustless card stripper (per illustration), manufactured by William Firth, Boston, both used in fabric mills for collecting waste or sweepings, declared to be dutiable under tariff item 453.

Bisto, per sample, a preparation for thickening soups or making gravy, manufactured by Cerebos, Limited, London, England, declared to be dutiable under tariff item 220.

Maltose (malt sugar), in powder form, per sample, manufactured by the Crown Maltose Company, Chicago, declared to be dutiable under tariff item 168.

Gate tops, per sample, for chatelaine bags, entitled to entry under tariff item 658.

Dome snap fasteners of metal, such as used on ladies' dresses and attached to the garment by sewing, declared to be dutiable under tariff item 454 (general tariff rate 30%, plus the war tariff of 7½%), in effect on and from 16th April, 1917.

Motor, attached to printing press, per illustration in *re* the Kelly Press, declared to be dutiable under tariff item 453. General tariff rate 27½%, plus the war tariff of 7½%.

Stickle automatic steam control apparatus for paper machines, declared to be dutiable under tariff item 453. General tariff rate 27½%, plus the war tariff of 7½%.

Electric welded furnaces, to be used in the manufacture of boilers for ships or vessels, declared to be dutiable under tariff item 454. (General tariff rate 30%, plus the war tariff of 7½%.)

Fresh beef and fresh pork, which have been sprinkled with salt, but are not cured meat, declared to be dutiable under tariff item 7.

Departmental Rulings.

Branding of packages containing imported eggs. The Collectors of Customs were instructed June 19, 1916, that packages containing eggs imported from foreign countries must not be branded or stamped with the words "Canada," "Canadian," "Packed in Canada," or with any word which might give the impression that the eggs are of Canadian origin.

In respect to importations under tariff item 470, ruled that free entry may be allowed without stating the name of the ship or vessel for which the materials are to be used; and that it is not necessary that Oath Form 4 should be subscribed to in such case.

Tin cans containing oysters in bulk; such cans, closed with wedge-shaped cover, ruled to be subject to duty on importation, as they are not destroyed in order to get at the contents.

Christmas stockings, containing miscellaneous articles, such as confectionery, toys, manufactures of paper, etc., ruled to be subject to duty at the rate applying to the component articles of chief value therein.

Old negative dry plates, imported to be used in the manufacture of dry plates, declared to be dutiable under tariff item 711.

Baker's fresh grated cocoanut, with the milk, put up in tin cans and containing nothing except pure cocoanut and cocoanut milk, manufactured by Franklin Baker Company, Philadelphia, dutiable under tariff item 711.

Materials, one described on invoice as oil cake meal, manufactured by J. Bibby & Sons, Liverpool, England; and the other as calf meal or oil meal, manufactured by Ryde & Company, Chicago, both ruled as dutiable under tariff item 711.

Sauer-kraut, in cans or other air-tight packages, dutiable under tariff item 86. When in other containers, dutiable under tariff item 87.

Lacquers, described as follows, have been before the Department for ruling as to tariff status, and are found to be manufactured from gum resin dissolved in denatured amyl alcohol or fusel oil, and are, therefore, dutiable under the provisions of tariff item 248, viz.:

"Gold lacquer special No. 69, Egyptian brush brass lacquer, Egyptian invisible lacquer, white dip lacquer, Egyptian white enamel No. 2, Egyptian brilliant lacquer No. 1, Helios dip lacquer, Lastina lacquer No. 10, Obelisk lacquer No. 4."

The thinners, in practically every case, were found to be denatured amyl alcohol, and, therefore, dutiable under the provisions of tariff item 156.

Note.—The foregoing ruling, respecting duty on certain lacquer thinners, is cancelled by Board of Customs Decision,

dated January 9th, 1917, which rates these thinners under tariff item 220.

Panama hoods, per samples, unbleached and unblocked, imported to be completed in Canada by hat manufacturers, ruled to be dutiable under item 711 at 17½%, plus the war tariff.

Steel bars, hot rolled, per sample, costing over 3½c per pound, ruled to be dutiable under item 386 at 5%, plus the war tariff of 7½%.

Piano-player parts, ruled to be dutiable at 25%, plus the war tariff, under item 598.

Oleographs, without lettering thereon, imported to be used in the manufacture of fancy paper boxes, ruled to be dutiable under item 180 at 22½% *ad valorem*, plus the war tariff of 7½%.

Bookbinders' gluing machine, ruled to be dutiable under item 442 at 10% *ad valorem*, plus the war tariff, when imported for use exclusively in bookbinding.

Materials for chemical works at Trenton, which works are financed by the British Government, are admitted free under tariff item 708, which exempts from duty, "Arms, military stores, munitions of war, and other articles the property of the Imperial Government."

Materials for the works at Lindsay, which is a Canadian enterprise, are subject to the usual requirements of the tariff as to duty.

Muskegon hemlock wood tanning extract; this article for use by tanners was ruled free, except for the war tariff, under item 203.

Hat plaits, per samples, ruled to be free of duty, except for the war tariff, under tariff item 641.

Copper and bronze wire, per sample, plated, ruled under tariff item 351, dutiable at 12½%, plus the war tariff.

Tea lead, per sample, ruled to be free of duty under tariff item 336.

Soluble Prussian blue, ruled to be dutiable under tariff item 246, at 22½%, plus the war tariff.

Soda, sulphate of, crude, known as "Salt Cake," ruled free under tariff item 210 when ground.

Compression spoolers for textile manufacture (per illustration and working description), ruled to be dutiable at 10%, plus the war tariff, under item 468.

Argo Nupak prunes, put up in hermetically sealed cans, found to be dried prunes, and dutiable under tariff item 99.

Success harrow cart and other similar harrow carts, intended and obviously for use only as parts of harrows, rated for duty under tariff item 446.

Binder truck wheels, consisting of wheels to which are attached short bent axles and which are unsuitable except as truck wheels for harvesters, rated for duty under tariff item 445.

Pepsin, produced from pig's stomach, rated for duty under tariff item 711.

Drums or cylinders containing liquid chlorine and gases, paying an *ad valorem* duty, considered usual covering and dutiable under tariff item 710 (*b*).

Slasher cells (per illustration and description), declared to be dutiable under tariff item 468. Rate of duty 10% *ad valorem*, plus the war tariff of 7½%.

Casters, specially designed for bronzing machine, and imported along with the bronzing machine. Rate of duty 27½%, plus the war tariff of 7½%, under tariff item 453.

Gold strip, per sample, unmanufactured. Ruled to be free of duty under tariff item 359.

Houghton's Coarse Achilles Carburizing Material, sometimes invoiced as No. 2 Coarse Achilles, from the E. F. Houghton Company, Philadelphia. Ruled to be dutiable under tariff item 314. Rate of duty 25%, plus the war tariff of 7½% *ad valorem*.

Raw cotton, imported to be used in the manufacture of cotton duck, for use as aprons or carriers on harvest binders, declared to be exempt from the war tariff, and refund authorized.

Tarpaulins covering cars in transit. In view of the present transportation conditions, *tarpaulins*, imported on and for the protection of automobiles while in transit to Canada on flat cars, may be entered as for warehouse and be permitted to be exported without payment of duty.

Well drilling machinery and apparatus for drilling for water, natural gas and oil, in general, are held to be of a class or kind manufactured in Canada and, as such, are not entitled to entry under tariff item 469, with the exceptions noted below.

The following well drilling machinery and apparatus believed to be of a class or kind not manufactured in Canada, may be entered under tariff item 469 until further instructed.

Well drilling machinery operated on the "rotary flush system," the "jetting flush system," or the "hydraulic system," and in which the chisel-shaped drill is not used, not to include motive power.

Case-hardened and forged steel nipples for recutting threads on casing or in casing coupling when lost in the well.

Well packers.

Cremora "C S," from the Dry Milk Company, New York, used in the manufacture of confectionery, dutiable under tariff item 220.

Diamonds, ruled not to be entitled to export for repair conditional on return on payment of duty on the value of the repair work, such as recutting or polishing.

Beam bleaching plant, ruled to be dutiable at 10% under item 468.

Roloco, so called, per sample, ruled dutiable under item 168.

Small samples of fabric of no commercial value, declared to be exempt from war tariff duties.

One trip egg cases, imported filled with eggs, declared to be exempt from regular duty.

Picture paper, per sample, for covering paper boxes, ruled to be dutiable at 22½%, plus the war tariff, under item 180.

Swivel wrench (Barrett's).

Oil well jacks (Barrett's), not including wrenches for tightening and loosening joints.

Apparatus of greater weight or diameter than stated below:

Drilling bits 1,100 lbs.
Under reamers 1,060 lbs.
Drilling jars 725 lbs.
Fishing jars 650 lbs.
Swedges 740 lbs.
Casing spears for 12-inch dia. casing.
Casing cutter for 6-inch dia. casing.
Ring and wedges (sometimes called spider and slips) for 6½-inch dia. casing.
Elevators for raising and lowering casing for 5-inch dia. casing.

Collectors of Customs are instructed to refer any special case to the Department for ruling, when the importer desires to appeal against the decision for the collection of duty on well drilling machinery and apparatus.

ORDERS-IN-COUNCIL.

Shipbuilding Concessions.

DRAWBACK OF CUSTOMS DUTY ON VESSELS BUILT IN CANADA ON AND AFTER 1ST NOVEMBER, 1916.

New regulations made and established in the above matter by Order-in-Council, dated 21st October, 1916.

These regulations provide that imported materials may be

entered as for warehouse by the builder in yards or buildings approved by the Minister of Customs, and may be ex-warehoused temporarily for the construction of the vessel, subject to deposit of one per cent. of the duty.

The regulations are as follows:

His Excellency, the Administrator in Council, is pleased to make the following regulations for granting a drawback of Customs duty on articles used in the original construction of vessels built in Canada on and after 1st November, 1916, and the same are hereby made and established accordingly:

(1) A drawback, not exceeding ninety-nine per cent. of the Customs duty paid, may be granted and paid by the Minister of Customs on materials used in the original construction of ships and vessels measuring over five hundred tons gross tonnage, built in Canada, when such ships or vessels are authorized by Order-in-Council to be exported for registry outside of Canada, or are British Registered in Canada, and are constructed so as to obtain a class in Lloyds, Bureau Veritas, British Corporation, or other recognized classification satisfactory to the Minister of Customs.

Provided, that the drawback payable under this section shall be in lieu of any drawback based on a specific rate per registered ton.

(2) The claimant for drawback must be the builder of the ship or vessel. Drawback shall be paid only on ships or vessels which have within themselves the powers of independent navigation, either by means of sails, steam or other motive power.

(3) The payment of the drawback shall be subject to the following conditions, viz.:

(*a*) The quantity of materials used and the amount of duty paid thereon shall be ascertained.

(*b*) The claimant for drawback shall be required to make a declaration in the terms set forth in Schedule "A" hereto.

(*c*) There shall be furnished by the claimant, a certificate from the Registrar of Shipping in the terms set forth in Schedule "B" hereto.

(*d*) The claim for drawback shall be verified under oath, before a Collector of Customs or Justice of the Peace, to the satisfaction of the Minister of Customs, in such form as he shall prescribe. The Minister of Customs may also require in any case the production of such further evidence, in addition to the usual averments, as he deems necessary to establish the *bona fides* of the claim.

(*e*) All applications for payment of drawback shall be placed before the Customs Department with evidence as above mentioned complete, within a period of six months from the date of registration or launching of the ship or vessel upon which the claim is made; otherwise the same shall be rejected.

Schedule "A."

I, ... of .....,
do hereby declare that I am the builder of, and claimant for drawback on materials used in the construction of a.....
..... called the .....
built at.....in the Dominion of Canada (1) .....and launched on the .....day of.....191.... as per certificate attached.

I further declare that the said.....is an entirely new vessel, built with.....knees and .....classed for..... years as per classification certificate of..... bearing date.....

Declared before me

this.....day of.....19....

.....
Builder.

Collector of Customs.

Schedule "B."

I, the undersigned Registrar of Shipping at.....
do hereby certify that the above-named vessel is entirely new, built during the season of.....by.....
at.....as above dated, and launched on the.....day of.....that the tonnage thereof is.....tons gross, and that the said vessel is built with.....knees, and that the registered owners are .....
(1) .....
.....

I further certify to having examined the certificates of classification, and find that the said vessel is classed at .....for.....years, and that the said vessel has within itself the power of independent navigation. Port.....

.....
Registrar of Shipping.

(Sgd.) RODOLPHE BOUDREAU,
Clerk of the Privy Council.

(1) State Names if registered in Canada—otherwise insert the words, "Not registered in Canada."

Several Articles Used in Manufacturing Are Admitted Duty Free by Order-in-Council.

The following articles used as materials in Canadian manufactures have been transferred to the list of goods which may be imported into Canada free of duty, by Order-in-Council in effect January 19, 1917, viz.:

(*a*) Rolled iron or steel hoop, band, scroll or strip, number fourteen gauge and thinner, and rolled iron or steel sheet, when imported by manufacturers for use only in their own factories in the manufacture of galvanized iron or steel hoop, band, scroll, strip or sheet.

(*b*) Corkwood, or cork bark, unmanufactured, when imported by manufacturers for use only in their own factories in the manufacture of corks, strips, shives, shells, and washers of cork.

(*c*) Materials imported by manufacturers for use only in their own factories in the manufacture of artificial limbs.

The same Order-in-Council established the following rates of duty on materials as described when for use in Canadian manufactures, viz.:

Battery jars of glass and articles of hard rubber when imported by manufacturers for use only in their own factories in the manufacture of electric storage batteries:

Under the British Preferential Tariff ....12½% *ad valorem.*
Under the Intermediate Tariff.....20 % " "
Unler the General Tariff.....20 % " "

By Order-in-Council, dated the 17th January, 1917, authority is granted for the free admission of Passover Bread and Matzo when imported and entered at the Custom House between the 1st of March, 1917, and the 6th April, 1917, inclusive, for use during the Passover season.

Drawback of Customs Duty on Ships' Stores Delivered for Vessels Proceeding on Ocean Voyages.

The regulations made and established in the above matter, by Order in-Council, dated 6th February, 1917, are as follows:

Regulations.

(1) A drawback equal to the customs duty paid may be allowed on ships' stores delivered for ships proceeding on an ocean voyage outside of Canada for use on board thereof: Provided that the Minister of Customs shall define and limit the kind, quantity and class of goods which may be so

delivered as ships' stores; and that such stores or any part thereof shall not be relanded, sold, or disposed of in Canada, without due entry and payment of duty.

(2) Before the delivery of stores for the said ships, the applicant for drawback shall notify the local Collector of Customs, in writing, as to the kind and quantity thereof and the time of shipment, and the delivery of such stores on board the ships shall be certified by a customs officer, and by the master or other officer of the ship authorized thereto, in the form prescribed by the Minister of Customs.

(3) The claimant shall not be entitled to receive such drawback until he has furnished to the Minister of Customs satisfactory evidence as to when and where the duty was paid, and such further evidence as the Minister of Customs may deem necessary to establish the claim and the *bona fide* delivery of the stores.

(4) The claim for drawback shall be made and substantiated upon oath before a Collector of Customs, in approved form, to the satisfaction of the Minister of Customs, within six months after the delivery of the stores in respect of which claim is made.

Drawback on Cotton Fabrics Used in the Manufacture of Rubber Belting, Rubber Tires and Rubber Tubes.

The following regulations have been made by Order-in-Council of the 6th February, 1917, under Section 286 of the Customs Act:

REGULATIONS.

(1) When imported cotton fabrics, on which customs duties have been paid, are used in the manufacture of rubber belting, rubber tires, and rubber tubes, there may be paid a drawback of ninety-nine per centum of the duties paid on the cotton fabrics used in the manufacture of the said rubber belting, rubber tires and rubber tubes.

Provided, however, that such drawback shall not be paid unless the duty has been paid on the cotton fabric, so used as aforesaid within three years of the date of the manufacture of the said rubber belting, rubber tires and rubber tubes.

Provided, further, that drawback shall not be computed in respect of any quantity of such cotton fabric in excess of the quantity of like cotton fabric used in the manufacture of rubber belting, rubber tires and rubber tubes made by the claimant for drawback and exported during the period covered by the claim subsequent to 1st January, 1917.

(2) The said drawback may be paid to the manufacturer of the rubber belting, rubber tires and rubber tubes, subject to the following conditions, viz.:

(a) The quantity of cotton fabric used and the amount of duties paid thereon shall be ascertained.

(b) Satisfactory evidence shall be furnished in respect of the manufacture of the rubber belting, rubber tires and rubber tubes in Canada and their exportation therefrom.

(c) Upon the exportation of the rubber belting, rubber tires and rubber tubes in respect of which drawback is to be claimed, Export Entries, in duplicate, in the usual form (with the words "subject to drawback" marked on the face of the entry) shall be filed with the Collector of Customs at the port of exit from Canada, naming the conveyance by which, and the country or place to which the belting, tires and tubes are to be exported, and fully describing the kind and quantity thereof, and also the marks and numbers on the packages.

(3) The claim for drawback shall be verified under oath before a Collector of Customs to the satisfaction of the Minister of Customs, in such forms as he shall prescribe, within one year after the manufacture of the said belting, tires, and tubes in Canada.

The Minister of Customs may also require in any case the production of such further evidence in addition to the usual averments, as he deems necessary to establish the *bona fides* of the claim.

Wheat and Wheat Flour.

An Order-in-Council, under the authority of the War Measures Act, 1914, Section 6, provided that wheat, wheat flour, and semolina should be free of any Customs duty when imported into Canada. The Order-in-Council is worded as follows:

Whereas the Minister of Finance reports that certain conditions arising out of the war seriously affect prices obtainable in Canada for wheat, especially of the lower grades;

And whereas in normal times there exists a good commercial export demand for milling purposes from Great Britain and the Continent for wheat of all grades;

And whereas this demand has for some time past almost entirely ceased on account of shortage of ocean shipping (due to submarine warfare), practically all available tonnage being required to transport grain of the higher grades and flour made therefrom, purchased in Canada and the United States by the British and Allied Governments for their respective needs;

And whereas in consequence of this condition much Canadian wheat is being exported to the United States market for sale there, notwithstanding the customs duty payable thereon under the provisions of the United States Tariff;

And whereas from inquiries recently made from the Board of Grain Commissioners for Canada and other authentic sources the Minister of Finance is satisfied that the prices now prevailing in Canada for wheat, particularly of the lower grades, are, owing to the cause above mentioned, much lower than the prices obtaining therefor in the United States; in fact there are strong grounds for the belief that advantage is being taken of the situation to maintain prices of the said grades at figures lower than are warranted by general market conditions, and from information at hand it appears that there still remains a large amount of last year's Canadian crop unmarketed;

And whereas it is desirable at a time when a special appeal is being made for increased agricultural production to supply grain and foodstuffs to Great Britain and her Allies, which now include the United States of America, that the Canadian farmer should feel that he will obtain the best market prices obtainable for the product of his industry;

And whereas the Minister of Finance is of opinion that it is in the circumstances advisable that such action should be taken which will give to Canadian wheat free access to the markets of the United States in lieu of the commercial markets in Great Britain and on the European Continent formerly available under the conditions then existing, and, with this object in view, he directs the attention of His Excellency to certain provisions of the Customs Tariff of the United States. By item 644 thereof wheat, wheat flour, semolina, and other wheat products, shall be entered free of duty from countries which do not impose a duty on wheat or wheat flour or semolina imported from the United States; otherwise the duty upon wheat is fixed at ten cents per bushel and upon wheat flour at forty-five cents per barrel and upon semolina and other products of wheat ten per centum *ad valorem;*

And whereas if Canada should place wheat, wheat flour and semolina upon the free list our wheat and wheat products would gain free entry to the markets of the United States;

And whereas it is desirable in the national interest that, for the reasons stated above, free access should be obtained to the markets of the United States for Canada's wheat;

Therefore His Excellency, the Governor-General in Council, under the authority of The War Measures Act, 1914, Section 6, is pleased to order and it is hereby ordered that wheat, wheat flour and semolina be transferred to the list of goods which may be imported into Canada free of duty of Customs.

DRAWBACK REGULATIONS.

Further Regulations Respecting Customs Drawback on Imported Materials Used in Articles Made in Canada and Exported.

The Department of Customs has sent the following instruction to Collectors of Customs:

"Referring to Memo. No. 1295 B. of 20th August, 1904, respecting Customs Drawback Regulations, the following additional Regulations have been made and established:

(a) When drawback is claimed by the manufacturer or producer of an article made in Canada for exportation and when the manufacturer or producer is not the exporter of the said article, the following documents shall be delivered with the claim for drawback:

(1) Certificate of Sale of the article by the manufacturer or producer to the exporter—and confirmed by the exporter.

(2) A copy of the Bill of Lading of the article exported duly certified as such by the Carrier or his agent.

(3) A copy of the Export Entry certified by the Collector of Customs at the port of exit where the goods were entered for exportation.

4. A declaration by the exporter before a Collector of Customs or Justice of the Peace, to the effect that the goods described in the copy of the Export Entry have been delivered for exportation in good faith, and are the identical goods specified in the Certificate of Sale by the Manufacturer or Producer to the Exporter as per copy of Certificate attached,—(or that the goods specified in the Certificate of Sale to the extent of

.....

.....

.....

have been used in the manufacture by .....

..... at .....

of the goods described in said Export Entry, as the facts may be)."

Form K 15¾ A.

Certificate of Sale for Exportation.

Goods Manufactured by .....

Sold to .....

	Quantity and description of goods sold in Canada for purpose of exportation.	Value. $	c.

Quantity and description of imported materials used wholly or in part in the manufacture of the above goods.	Value as entered at customs. $	c.	Duty paid. $	c.	Number of entry, date of entry and port of entry.

CERTIFIED CORRECT.

Dated at..... Signature.....

.....19..... (Manufacturer).

Signature.....

(Purchaser for Exportation).

Board of Trade Journal, No. 1,066, May 3rd, 1917.

APPENDIX "B."

British Trade Abroad.

LIST OF BUYERS OF BRITISH GOODS IN FOREIGN MARKETS—FORM K.

The Foreign Trade Department have taken up the question of obtaining from His Majesty's Diplomatic and Consular Officers in certain foreign countries fuller and more systematized information than has been available hitherto in regard to possible importers or buyers of British goods. With this object in view the Foreign Trade Department has issued a circular (known as Form K) to His Majesty's Diplomatic and Consular Officers in the following markets, viz.: Spain, Portugal, Persia, Siam, China, Japan, Dutch East Indies, Philippine Islands, Morocco, Liberia, and the Republics of Central and South America, instructing them to furnish the names and addresses of recommended firms desirous of trading with the United Kingdom. In order to enhance the value of these lists the Consuls have been asked to supply certain particulars in regard to firms whose names they furnish, including such items as European references and local bankers; whether the business is wholesale or retail; whether the firm imports on own account or consignment, or commission basis, and terms of trading; the principal goods required and method of transport and route from the nearest port; the names of firms on the statutory list which the recommended firms can replace; the composition of the firm with nationality of principals; and the language in which correspondence should be carried on.

Particulars are also to be furnished as regards the mode of transport and route from the nearest port in cases where the firm recommended desires delivery of the goods purchased at an up-country town.

The firms reported on are to be classified under the following main trade headings:

Building Materials, etc.—Cement, contractors' supplies, paving material, roofing paper, sanitary appliances, timber, wall paper.

Chemicals.—Chemicals and drugs, disinfectants, manures (chemical), perfumery, tanning material.

Coal.—Coke, patent fuel.

Electrical Machinery.—Electrical appliances and fittings.

Furniture,—Bedsteads, etc., carpets, rugs, furniture, linoleums, oilcloth, mangles.

General.—General commission agents, general merchants.

Glass.—Chinaware, glassware, earthenware (sanitary), filters, firebricks, glass (window).

Iron and Steel.—Cutlery, fencing (wire), gas fittings, hardware and ironmongery, heating apparatus, iron and steel, lamps, metals, mining requisites, pipes, tubes, etc., railway materials, safes, stoves, ranges, tin plates, tools, tramway material, wire, wire goods, water supply fittings.

Leather.—Belting, boots and shoes, hides and skins, leather goods, saddlery, harness, travelling requisites.

Machinery.—Agricultural machinery and implements, dairy appliances, engines (steam, gas, oil), knitting machines, locomotives, machine tools, machinery (general), scales and weighing machines, sewing machines.

Paint.—Greases, oils, varnishes, rope, ship chandlery, soap (common), waste (cotton, etc.).

Paper.—Inks (printing and writing), paper, stationery, typewriters.

Provisions.—Aerated waters, confectionery, fish, groceries, etc., tobacco, wines and spirits.

Rubber.—Rubber goods (household), rubber goods (surgical).

Ships.—Anchors, chains, etc., boats, launches (motor, etc.), shipbuilding materials.

Sporting Requisites.—Arms and ammunition, musical instruments, photographic requisites.

Textiles.—Bags and sacks (canvas, etc.), clothing, cottons, staple articles, dress and fancy goods, embroidery, lace, haberdashery, hats (men's, women's), hosiery, jute goods, millinery outfitters, silk goods, tarpaulins, umbrellas, woollen goods, dress goods, men's wear, linings, waterproofs, etc., yarns.

Vehicles.—Baby carriages, etc., carriages and accessories, cycles and accessories, motor car and accessories, tires (rubber, etc.).

Watches.—Jewellery, precious stones, scientific instruments, silver goods, plated goods, watches and clocks.

Miscellaneous, A.—Goods not included in the foregoing classification.

B.—*Supplementary Information.*—Banks, patents, trademark agents, credit enquiry offices, lawyers, solicitors, etc., local newspapers considered suitable for advertising purposes.

In addition to furnishing the above list of firms, His Majesty's Consular Officers are to send quarterly reports giving figures showing the value of the import and export trade of their district, and the shares of the United Kingdom and the principal competing countries, together with brief particulars as to weights, measures and currency in use, name of port of supply and chief inland distributing centre, total population, etc., etc.

A number of replies to the circular have already been received by the Foreign Trade Department, and the information thus collected will shortly be available for distribution to British firms likely to be interested.

In order to secure an effective method of distribution, the Foreign Trade Department have arranged for the dissemination of the information by the Association of Chambers of Commerce of the United Kingdom (through its Associate Chambers of Commerce), the London Chamber of Commerce, and the Federation of British Inndustries. When necessary the information will also be distributed through approved Trade Associations.

The Foreign Trade Department have also instructed His Majesty's Diplomatic and Consular Officers to send duplicate copies of their replies to the Department of Commercial Intelligence. Lists of buyers of British goods in the countries specified above, together with the further particulars of the business of such firms which are asked for under Form K., are therefore now being received in the Department of Commercial Intelligence, and will shortly be available to the United Kingdom manufacturers and dealers in United Kingdom goods, on application at the Offices of the Department, 73 Basinghall Street, London, E.C. 2, as well as at the Foreign Trade Department. Notices calling attention to the receipt of the lists and enumerating those available will appear in the Board of Trade Journal.

It should perhaps be added, in order to prevent any misapprehension, that the new service thus inaugurated by the Foreign Trade Department is intended to supplement, and not in any way to take the place of, the information as to openings for British trade abroad regularly disseminated by the Department of Commercial Intelligence, both in the pages of the Board of Trade Journal, and also by means of circulars issued to British firms whose names are entered on the Special Register of the Department for the receipt of confidential information.

APPENDIX "C."

Anglo-Portuguese Treaty of Commerce and Navigation.

Statement showing the articles in respect of which reductions of duty are granted under the Portuguese "Conventional" Tariff; showing also the "Gentral" Tariff rates of Duty on the various articles, for purpose of comparison.

(Escudo (100 centavos) equals 70½ cents approximately; kilogramme equals 2.2046 pounds avoirdupois; centimetre equals 0.39 inch; millimetre equals 0.039 inch; cubic metre equals 1.308 cubic yards; litre equals 0.22 gallon).

Tariff No.	Articles	Rate of Duty under the General Tariff.	Es.	cts.	Conventional Rate of Duty.	Es.	cts.
31*a*	Hides or skins tanned	Kilog.	0	30	Kilog.	0	24
32	Hides or skins, curried, morocco dressed and Morocco leather	"	0	60	"	0	48
32*a*	Curried calf skins, dyed or blackened	"	0	60	"	0	36
32*b*	Hides or skins, curried, varnished, smooth or grained	"	0	60	"	0	40
42	Staves	2% ad val.			½% ad val.		
44	Wooden hoops for casks	3% ad val.			½% ad val.		
58	Flax and hemp, raw	Kilog.	0	009	Kilog.	0	005
62	Common wood, in beams, joists and planks of a thickness exceeding 75 millimetres and a minimum breadth of 25 centimetres	Cub. met.	1	40	Cub. met.	1	20
63	Common wood, sawn into boards or slabs of a thickness exceeding 35 millimetres, but not exceeding 75 millimetres	Cub. met.	2	80	Cub. met.	2	50
64	Tar and pitch, mineral	1,000 kilogs.	0	10	1,000 kilogs.	0	01
97	Mineral oils, light for illuminating purposes (density 0.780 to 0.820; point ignition 37 deg. to 49 deg.)	Kilog.	0	067	Litre	0	046
98	Mineral oils, medium (density above 0.820 and up to 0.860; point of ignition from 50 deg. to 150 deg.)	"	0	06	Kilog.	0	052
103	Steel, cast and rolled, not specified (in the tariff), including rails for railways and accessories for fixing the same	100 kilogs	0	20	100 kilogs.	0	10
114	Iron, hammered or rolled, unwrought, including rails for railways and accessories for fixing the same	"	0	15	"	0	10
154	Extracts for use in dyeing, in any condition (gross weight)	Kilog.	0	003	Kilog.	0	002
159	Substances for use in medicine, or for perfumery, not specially mentioned (in the tariff)	7% ad val.			5% ad val.		

Tariff No.	Articles	Rate of Duty under the General Tariff.		Conventional Rate of Duty.	
			Es. cts.		Es. cts.
ex 182	Ribbons and galoons of mixed silk (including the weight of the interior packing, except wooden, cardboard, or pasteboard boxes)	Kilog.	7 00	Kilog.	6 50
187	Tissues of pure silk not specially mentioned (in the tariff)	"	7 50	"	7 00
276	Packing cloth and coarse cloth of linen, or of jute mixed with linen or hemp	Kilog.	0 21	Kilog.	0 18
ex 291	Sacks made of packing cloth or coarse cloth of jute	Three times the duty on the tissue of which made		"	0 225
ex 332	Potatoes	Kilog.	0 007	"	0 003
344	Tea	"	1 00	"	0 90
348	Codfish, of all kinds	"	0 039	"	0 034
367	Cheese	"	0 30	"	0 20
386	Instruments, implements and tools, not specially mentioned (in the tariff) for arts and trades, agriculture and gardening (including sewing machines, manure distributors, and, in general, all implements and apparatus by which manual labor is carried out or assisted)	"	0 06	"	0 02
413*a*	Automobiles, complete, for two persons	Each	120 00	Each	100 00
416*a*	Automobiles for traction or for the transport of goods	"	120 00	"	80 00
416*b*	Automobiles, incomplete (chassis with motor)	"	70 00	"	20 00
420*a*	Motor cycles, complete, including the motors	"	50 00	"	15 00
ex 438	Leather covers (bandages) for wheels of automobiles or other vehicles	Kilog.	1 20	Kilog.	0 15
ex 440	India-rubber and gutta-percha in the form of protective covers and pneumatic tyres for wheels of automobiles and other vehicles	"	0 60	"	0 05
ex 477	Tin capsules for bottles	"	0 20	"	0 16
ex 504	Engravings and prints in more than one color and lithographs	"	1 00	"	0 60
ex 507	Books and pamphlets in foreign languages, attached or in sheets, atlases and geographical maps with inscriptions in foreign languages	"	0 01	"	0 005
567	Medicaments: pills, dragees, capsules, pearls, and medicinal extracts (including the weight of the interior packing	"	2 00	"	1 50
568	Medicaments: globules, granules, "Lentilles," and similar products (including the weight of the interior packing)	"	5 00	"	4 50
569	Medicaments: pastilles of any kind (including the weight of the interior packing)	"	1 20	"	1 00
570	Medicaments: simple or compound, not specially mentioned (in the tariff) (including the weight of the interior packing)	"	0 60	"	0 50
ex 577	Smoking pipes, of clay or chalk, neither ornamented nor inlaid with any other material (including the weight of the interior packing)	"	0 50	"	0 08
ex 590	Candles of all kinds for illuminating purposes, except candles, in which paraffin predominates	"	0 12	"	0 09

A NOVEL TRUCK.

Fitted with Detachable Tongue, it Does Not Take Up Much Room in Narrow Places.

A truck of novel design incorporating various desirable features is known as the one-man detachable-tongue shop-truck. Roller-bearing wheels of large size under the load to insure easy-running qualities and a detachable jack-tongue with roller-bearing lead-wheel are features of the construction. Modified types with flaring side boards and box or rack equipment can be readily built up from the primary form of simple platform. A supporting foot is provided at the front end to take the load when the tongue is detached.

An especially convenient feature is the jack-tongue. Where several trucks are in use, one tongue for each four or five has been found ample. Being removable it is out of the way when the trucks are not being moved. This is appreciated as a real asset and convenience in the narrow aisles of a machine shop when the truck is being used as a temporary storage for parts to be machined. It is also available to use on other trucks.

The tongue may assume any angle when coupled with the truck, which can be turned out of line through a very small radius. It is made of malleable iron and steel, needs little repairing and is not expensive.

The truck boxes and side boards are heavy, and of durable wood, being secured in position with malleable corner irons and bolts. The wooden parts are easily removable when worn out. A type is to be made for special use, as in handling coke or pig iron and sprue charges for cupolas or air furnaces where overhead handling equipment is installed. —*Scientific American.*

WHY THE HAND-RAILS ON STAIRS?

The majority of us, subconsciously, no doubt, have come to look upon hand-rails on stairways as a conventional decoration—a sort of finishing off, as it were. Yet last year 1,149 people were killed and more than 4,000 crippled in the United States alone, on stairways. High heels and run-down heels are largely responsible for stairway accidents, as well as trailing skirts. But in almost every instance the use of the hand-rail could have saved the victims of last year's stairway casualties. Hand-rails are intended for use, and accordingly should be firmly grasped when going down stairs, no matter how confident one may be.—*Scientific American.*

TRANSPORTATION

THE work of your Committee during the past year has been heavier than in any year since the Department was formed. Abnormal conditions, due to the movement of war materials and munitions of all kinds, with preference over other traffic, shortage of equipment and labor, numerous embargoes, petty strikes, coal and coke shortages and the unusual severity of the past winter, have all combined to increase the cost and multiply the difficulties of transportation to the carrier and shipper. It would be difficult to estimate the enormous waste due to these causes. Your Committee has worked faithfully in an effort to relieve the situation, and has been able to assist members materially.

Notwithstanding these conditions, the railways have made large gains over the preceding year in gross earnings. They were allowed by the Board of Railway Commissioners an increase of approximately five per cent. in their rates in Eastern Canada, and have recently asked for another advance of fifteen per cent. on all tariffs of tolls, freight and passenger, to meet the increases in cost of material and labor. The Committee, after careful consideration, has advised the Commission that it will not oppose this suggested increase, provided it is considered strictly as a war measure, and that the Commission can satisfy themselves that it will enable the railways to provide an adequate service throughout; provided, also, that it shall remain in force for a limited period to be determined by the Board. The present needs for equipment are apparent, and require immediate attention. Mr. A. H. Smith, President of the New York Central Railroad, in the minority report of the Railway Commission to enquire into railways and transportation, says:—

"The railways of Canada are in desperate need of equipment. Whatever decision is made with reference to the railways, the transportation problem is now acute in so far as equipment is concerned. I would, therefore, recommend that the Government undertake at once to provide an ample supply of freight cars and locomotives against immediate and imperative needs. These cars and engines may be had, if desired, under trust agreements. It will be a simple matter to turn these cars and engines over to the operating companies under lease or contract of purchase, which may be exercised when conditions are more nearly normal."

Your Committee strongly recommends that the Association in Convention make some representations in regard thereto to the Government.

At the annual meeting in 1915, a resolution was passed recommending that the Government appoint a special commission for the purpose of investigating transportation conditions, and make such reports and recommendations as might seem proper. A Commission was duly appointed, and their reports are now before the Government. Unfortunately the Commission was unable to agree in its recommendations, and the result has been a majority and minority report. Reference will be made thereto later.

In preparing this report for your consideration, we have only touched, in a brief manner, on questions of general interest. It will convey, however, some idea of the extent of the service being rendered to the membership at large. Transportation is undoubtedly one of the most important questions with which the Association has to deal, and anything done to impair its efficiency reflects upon the business of the country, more especially at the present juncture, when all our resources are being taxed to their utmost.

The Committee desires to place on record its appreciation of the valuable assistance received from the Transportation Committee of the Prairie Provinces Branch. Some of the more important matters dealt with by this Committee were: Increased Express Rates on Castings, Heated Refrigerator Car Shipments, Increase in Live Stock Rates, Charges for Ice and Salt, Teamsters' Strike at Winnipeg, Large Shipments by Express, Rates on Canned Salmon from British Columbia to Distributing Centres in Western Canada, Packing Express Shipments, Freight Rates from Quebec to Winnipeg, Fish Rates from Winnipeg and other Points to Eastern Canada, Liability of Express Companies through Delay in Transit, Marking Freight, Shed Storage Charges, Proposed Freight Classification No. 17, Cartage Rates Winnipeg, Extension of Delivery Limits Regina, Ratings on Manufactured Furs, Proposed New Car Service Rules, Increased Lake and Rail Rates, Revision of Railway Act, Charge for Freight Tariffs, Telegraph Forms, Express Classification Light and Bulky Articles, Rate on Soda Ash from Head of the Lakes to Edmonton, Switching (Winnipeg).



—British & Colonial Press photo.

J. A. Riordan
Standard Sanitary Mfg. Co., Limited, Toronto
Chairman, 1917-18, Transportation Committee, Canadian Manufacturers Association

Royal Commission to Enquire Into Railways and Transportation in Canada.

The Royal Commission appointed for the purpose of investigating transportation conditions in Canada, consisting of Mr. A. H. Smith, President, New York Central Railroad; Sir Henry L. Drayton, Chairman, Board of Railway Commissioners for Canada; and Mr. W. M. Acworth, Economist, has, as you are aware, reported on the railway situation. The duties assigned to them by the Order-in-Council were as follows:

1. The general problem of transportation in Canada.
2. The status of each of the three Transcontinental railway systems—that is to say, the Canadian Pacific Railway system, the Grand Trunk Railway System (including the Grand Trunk Pacific, the Grand Trunk Railways and their several branches) and the Canadian Northern Railway system, having special reference to the following considerations:
   (*a*) The territory served by each system and the service which it is capable of performing in the general scheme of transportation;
   (*b*) Physical conditions, equipment and capacity for handling business;

(c) Methods of operation;
(d) Branch lines, feeders and connections in Canada;
(e) Connections in the United States;
(f) Steamship connections on both oceans;
(g) Capitalization, fixed charges and net earnings, having regard to—
(i) Present conditions,
(ii) Probably future development with increase of population.

3. Reorganization of any of the said railway systems, and the acquisition thereof by the State, and in the latter case, the most effective system of operation, whether in connection with the Intercolonial Railway or otherwise.

4. Generally speaking, all matters which the members of the Board may consider pertinent or relevant to the general scope of the enquiry.

Unfortunately the Commission was unable to agree upon its findings. Briefly, the majority report recommends that the Government take over the Canadian Northern, the Grand Trunk, and the Grand Trunk Pacific Railways, and delegate their management, together with the Intercolonial and the Transcontinental, to a Board of Trustees, the first members of this Board to be named by Parliament, and their successors to be named by the Governor-in-Council on the nomination of the members of the Board themselves.

Mr. Smith, in the minority reports, suggests—

1. That the Grand Trunk shall take over and operate the Eastern lines of the Canadian Northern;

2. That the Canadian Northern shall take over and operate the Grand Trunk Pacific lines in the West;

3. That the Government, through a Board of Trustees, shall take over and lease the lines between North Bay and Winnipeg, except those of the Canadian Pacific, to either the Canadian Northern or the Grand Trunk, and if neither applies, to some other qualified company.

In other words, he would confine the Canadian Northern to the West and the Grand Trunk to the East. Each would then have a well-defined territory, and would be able to eliminate much of the present duplication of mileage and service. No change is suggested in the Government operation of the Intercolonial and the eastern part of the Transcontinental.

As regards the Grand Trunk, he says:

"It will be necessary to effect some compromise which will enable this Company to continue."

Both reports have been so fully commented upon by the press that your Committee does not consider it necessary to take up time in going into them in detail, except to point out that whilst all of the Commissioners agree that government ownership is undesirable, the majority expresses the opinion that a Board of Trustees, absolutely free from political interference, would solve the question. Mr. Smith, in his report on the other hand, points out that if one Parliament can create a Government Board to manage this proposed system of twenty thousand miles, another Parliament can abolish it and turn the system over to political management.

Whether or not the Commission will continue the investigation recommended by the Association in the resolution adopted at the annual meeting held in Toronto in June 1915, the Committee is unable to say. It was the view of the Association, as then expressed, that it should embrace transportation conditions generally, both rail and water, and your Committee strongly recommends that this Convention make representations to that effect to the Government.

As regards the reports, your Committee has given both of them serious consideration, having held three special meetings for that purpose, and a resolution outlining its views will be submitted for your consideration.

If the report does nothing else, it discloses the fact that owing to lack of proper Government regulation, there has been unnecessary duplication of lines and facilities, and that legislation is absolutely necessary to guard against such evils in the future and to protect investments already made.

The following is a summary of the matters dealt with by the Committee and the Department during the past year:—

Automobiles—

1. Increase in minimum weights—shipments K.D.

Conditions of Carriage—

1. Rail and ocean joint bill of lading.
2. Shippers' load and count.
3. "Owners risk of delay" endorsation required.

Claims—

1. For overcharge.
2. For pilferage, loss or damage.
3. New forms for concealed loss claims.

Classification Freight Traffic—

1. Proposed Canadian Freight Classification No. 17.
2. Application for changes in ratings, etc., in connection with the following:
Alimentary paste; asbestos cement; beds; binder twine; camp stoves, k.d ; cigars and cigarettes (in corrugated boxes); dry measures; dummies and forms; electrolytic tank arresters; felt soles with boots and shoes; field-kitchens; flat steel sheets (plain or galvanized); freight delivery wagons or trucks; fresh frozen meats; fuse (time) parts; glass photo negatives (old); hog hair; ice-cream cones; ladders and swings; leather substitute; meats, fresh and packing house products; mixed carloads (application Calgary Board of Trade); mops and furniture polish; owner's risk; plowshares and plow-parts; popcorn confectionery; rubber goods; salted meats; shells (empty); small cars ordered, large cars furnished; steel barrels, drums and kegs; stump pullers; tables, extension; tubing (iron or steel); toys and toy horses; trailer trucks; wire horse muzzles.
3. Supplement 8 to Classification No. 16.

Car Service Rules—

1. Average agreement.
2. Reciprocal arrangement.
3. Extension of free time on certain commodities.
4. Increased rates (in effect Jan. 1st to Apr. 30th, 1917).
5. Proposed revision of rules.
6. Reduction free time at seaboard.

Car Supply—

1 Automobile equipment.
2. Increasing load of cars.
3. Refusal C. N. R. to supply refrigerator cars for canned goods.
4. Shortage equipment on I.C.R.
5. General.

Cartage—

1. Increased charges.

Diversion—

1. Charge by railways for change in destination of car after arrival at large terminals.

Embargoes—

1. On export freight.
2. On freight from U.S. via Niagara and Detroit gateways.
3. Less than carload freight for Toronto and Montreal.

Express Traffic—

1. Changes in classification.
2. Packing conditions for shipments of eggs
3. Delivery limits, Regina, Montreal.
4. Corrugated, pulp and fireboard container specifications.
5. Cartage on Carload shipments.
6. Labels for celluloid shipments.
7. Confectionery.
8. Rates on fish, Selkirk to Eastern Canada.
9. Delays to shipments.

Follow Lot Rule—

1. Proposed discontinuance application on Rule 3, Canadian Freight Classification to "commodity" tariffs.

Freight Rates.

1. Abrogation application on Rule 3, Canadian Freight Classification to "commodity" tariffs.
2. Joint rates.
3. Ocean rates.

4. Commodity rates on cotton piece goods from St. John, Milltown, etc.; Paper from Highlands to Nobel.
5. General advance in Eastern Canada, class and commodity.
6. General advance between Eastern and Western Canada, "Lake and Rail" rates postponed.
7. Export rates on iron and steel articles; flooring and wood blocks.
8. Advance frrom Winnipeg, Portage la Prairie and Brandon to points in Manitoba.
9. Re-adjustment Transcontinental commodity rates.
10. Proposed general increase 15 per cent. in Canada and United States.

Heated Car Service—

1 New service established.

Icing—

1. Proposed revision of charges.

Live Stock—

1. Form of contract.
2. Disinfecting cars.
3. Charge for return of attendant.
4. Proposed increase rates sheep and hogs in single deck cars from West to East.

Minimum Carload Weights—

1. Advance on logs.
2. Advance on grain and grain products.

Milling-in-Transit—

1. Reduction on stop-off charge in Eastern Canada.

Passenger Rates—

1. Proposed general increase of 15 per cent. in Canada and United States.

Railway Act—

1 General revision of.
2. Placing water carriers under jurisdiction of Railway Commission.

Regulations—

1. Governing explosive and inflammable articles.

Siding Agreements—

1. Installation of private sidings.

Steamship Service—

1. Between Canadian Atlantic and Pacific Coast ports, also between New York and Pacific Coast ports via Panama Canal.
2. Between Atlantic and Pacific Coast ports and New Zealand and Australia.

Storage—

1. Head of the Lakes.
Shed storage charges.

Switching.

1. Local switching.
2. Interswitching.

Telegraph—

1. New contract form.

Terminal Facilities.

1. Toronto and Montreal.

Transportation Commission—

1. Report of.

Eastern Rates Case.

The Board of Railway Commissioners, by Order dated July 1st, 1917, gave the applicants practically all they asked for with the exception of the increase in the arbitraries east of Megantic and Levis. Exceptions were taken to the increases on coal by manufacturers of Kitchener, Preston, Waterford and Waterloo, and a special hearing was granted by the Commission. So far no decision has been rendered. There were also objections filed in regard to the effect of the re-adjustment on international rates, and although consideration was promised no further action was taken.

Transcontinental Rates—Commodity Westbound.

A general increase in these rates was made effective February 12th, 1917, corresponding with a similar increase made from Eastern United States to Pacific Coast points, effective December 30th, 1916. All members were duly advised in advance thereof.

Proposed Revision of Rate Classification.

The railways submitted to the Board of Railway Commissioners in July last the general revision of the Canadian Freight Classification, which has been on foot for nearly three years. As they failed, however, to comply with the Commission's order requiring them to indicate by symbols the changes proposed and the effect thereof, your Chairman and Manager



J. E. Walsh
Manager, Transportation Department, Canadian Manufacturers Association

of the Department personally protested to the Railway Commission, and as a result the following memorandum was issued:

"Owing to the fact that the new Classification contemplates the uniform classification of the whole country—it is extremely difficult as the matter now stands, for the Board, and it would seem to be impossible for the shippers, to properly consider the effect of the new rules and the new Classification without definite information as to all changes sought, the injustice or difficulty suffered under the former regulations, and speaking generally, the effect of the changes."

Your representatives were also advised that no action need be taken until this information was forthcoming. The Railways replied in November that the rules, condition of carriage, description of articles, packing requirements and carload minimum weights, were largely those suggested by the United States Uniform Classification Committee, where such had been adopted by both the United States Official and Western Classifications, and that uniformity with such was desirable in view of the movement of traffic between Canada and the United States. After some further correspondence the Commission advised in February last that the railway

companies had stated it was impossible for them to file statements showing with any degree of accuracy the effect of the proposed changes on traffic in Eastern and Western Canada, respectively, and that after careful consideration it had decided to waive that portion of the direction contained in General Order No. 169. We were also advised that the time of filing objections to the proposed rules and conditions of carriage had been extended to March 31st, after which hearings would be held at the principal points in the East and West. Strong protests were made against any action being taken by the Commission at the present time—first, at a meeting of the Boards of Trade and shipping organizations held at Regina on March 14th, and afterwards in Toronto on March 27th, at both of which the Association was represented. The following is an extract from the resolution adopted at the Regina conference:

"We are strongly opposed to the principles embodied in proposed Classification No. 17, inasmuch as it suggests a uniform classification throughout Canada, which fails to take into account conditions both geographical and industrial, which are materally different east of Fort William and west thereof."

The resolution passed at the Toronto meeting suggested that the present was not an opportune time to consider such sweeping changes in transportation conditions—furthermore, that the proposition was unfitted to the commercial conditions obtaining in Canada, both east and west of Port Arthur, and that they appeared to have been framed largely on conditions existing in United States which, owing to the difference in volume of traffic and greater population, are dissimilar.

Both the west and the east are agreed that a uniform classification along the lines suggested could not be worked out.

The Commission held preliminary sittings in Hamilton, Toronto, Ottawa and Montreal during April for the purpose of hearing local interests. Members of the Association appeared at these hearings in support of the position previously taken by your Committee. Following the hearing at Montreal the Commission issued a memorandum, in which they stated they had heard some interim explanation from the railways and a number of objections to both the rules and classification from a large number of shippers, that as the criticism which shipping interests west of the lakes might offer would be different from that already heard, it might be well, before taking any further action, that the application should be set down for a hearing at the chief centres of population in the west, and after the general position of western shippers had been stated, the railway interests should be directed to hold informal conferences with those interested in different lines of trade for the purpose of agreeing as far as possible in the details of the proposed classification. Sittings are now being held in the West for that purpose.

A thorough analysis of the Rules has been made by the Department. The different interests will be invited to confer in regard to the changes proposed, in which they are interested, and the action to be taken in regard thereto. The Committee has the matter well in hand.

Classification—General.

The report indicates the extent to which members consult the Department in regard to changes in the Freight Classification. Notwithstanding the fact that a general revision is on foot, a number were made during the past year, in some instances favorable to the railways, and in others to the shippers. In one or two cases appeals were made to the Commission with satisfactory results.

Increased Demurrage Charges.

The railways applied to the Commission in December last for authority to increase the demurrage charge from $1.00 to $4.00 per car per day, and to cancel the twenty-four hours additional free time for unloading coal, coke and lime in bulk, and for loading or unloading the following descriptions of lumber, namely, boards, deals, and scantlings.

Following several informal conferences and a hearing before the Board, the following was adopted, effective January 1 to April 30, inclusive:

$1.00 for the first 24 hours after free time.
$1.00 for the second 24 hours after free time.
$3.00 for the third 24 hours after free time.
$5.00 for the fourth 24 hours after free time.
and each succeeding day.

There is an application now before the Commission for a complete revision of the rules, and the same is receiving careful consideration. It is the intention to urge, when the application comes up for hearing, that action be taken in regard to our application, which has been before the Board for some years past for average demurrage. It is also expected that those advocating reciprocal demurrage will take this opportunity to press their views.

Checking Freight on Private Sidings.

The railways gave notice that it had been decided to discontinue furnishing checkers to check freight loaded on private sidings. Following negotiations the service was continued until January 1. After several conferences it was agreed that clean bills of lading would be issued provided shippers and consignees adopted the sealing and checking arrangement outlined in our circular No. 121, December 26, 1916. So far as your Committee is aware it is working satisfactorily.

Bills of Lading: Owner's Risk of Delay.

A number of members complained they had been notified that in view of the unusual conditions, bills of lading would be endorsed "Owner's Risk of Delay." On bringing the matter to the attention of the proper traffic officials, the order was cancelled.

Notice of Arrival of Goods at Destination.

There have been few applications in the courts for interpretation of the conditions of the bill of lading as revised some years ago, in which the Association took a prominent part. The question, however, of what constitutes proper notice to remove goods has recently been decided by the Quebec Court of Review. The judge who delivered the judgment, after quoting Section 6, said:

"It would seem perfectly clear from this section that whatever liability the consignee may incur by reason of his failure to remove the goods, that liability attaches only after a written notice has been sent or given by the carrier. I should say that the sending or giving of that notice is a condition precedent to the right of the carrier to do the things or exact the penalties provided for in section 6 of this contract."

Further—

"Under the section as it now reads I should say that the obligation of the carrier, in order that it may enforce its contract, is to prove that the notice reached the defendant or reached his domicile or place of business."

Again—

"I am of the opinion that the entire burden of proving, not the mailing of the notice to the post office, but the giving of the notice, rests upon the company, that it must prove that the notice reached a place under the control of the consignee or his employees or servants."

It will be observed that the judge held that it is the duty of a railway company to give notice in a way capable of

proof. The decision is an important one, and will assist materially in the settlement of disputes, particularly in connection with claims for demurrage.

Proposed Increase of 15 Per Cent. in Freight and Passenger Tolls.

As you are aware the railways have applied to the Board of Railway Commissioners for a recommendation to the Governor-in-Council for the passage of an Order-in-Council under the War Measures Act, 1914 (Second Session), permitting them to make a general advance in their tariffs of tolls upon the ground that such advance is necessary and advisable for the security, defence, peace, order and welfare of Canada within the meaning of said Act.

The applicants submit that at the present time, when the whole resources and energy of Canada are devoted to the prosecution of the war, it is essential to the utmost utilization of these resources and energy, that the transportation facilities of the country should be maintained at the highest practicable state of efficiency. Comparative statements showing the cost of equipment and material, and the heavy increase in the cost of labor have been filed in support of the application.

All members were advised by circular of the application and after carefully considering the replies thereto, your Committee advised the Railway Commission that the Association would not oppose such increase in rates, not exceeding fifteen per cent., as the Commission might consider proper, on the following conditions:

1. That it be considered strictly as a war measure.
2. That the Board of Railway Commissioners can satisfy themselves that this increase will enable the railways to provide an adequate service throughout.
3. That it shall remain in force for a certain period only, to be determined by the Board.

The majority of the members heard from state most emphatically that service must be our first consideration, and that they are willing to agree to any reasonable increase which will secure an improvement therein.

Revision of Railway Act.

The Committee is pleased to report that the following changes, suggested some time ago by the Association, have been provided for in the Revision of the Act now being dealt with by a special Committee of the House of Commons:

Placing under jurisdiction of the Board of Railway Commissioners for Canada, railways working and constructed under Provincial charters, and afterwards absorbed by Dominion chartered companies;

Giving the Board the power to suspend or postpone in advance the effective date of any tariff filed with it;

Providing for the payment of interest at the rate of 5 per cent. on overcharges.

On the instructions of your Committee the Manager of the Department appeared for the Committee in opposition to the Section placing port-to-port water carriers under the control of the Board of Railway Commissioners.

Increase in Lake and Rail Rates.

By direction a protest was filed against the proposed increase in lake and rail clause and commodity rates effective April 23, to points west of Port Arthur and Fort William, and the tariffs were suspended by the Commission. Sittings are now being held in the West to hear the objections thereto.

Delays to Freight in Transit.

It would be impossible to estimate the losses which have occurred owing to embargoes and the inability of railways, particularly in the East, to move traffic during the past winter. A great deal of the trouble was due to lack of motive power. Relief, however, to some extent was obtained through the United States railways leasing locomotives to Canadian roads. Large quantities of freight were moved by express, resulting in the demoralization of that service. The congestion of traffic at the seaboard contributed in a very large extent to these conditions. That some of the railways in the East are not yet in a position to handle traffic promptly is apparent, and unless some immediate steps are taken to improve their conditions, we may look for a repetition of last winter's conditions. The Committee again urges that the matter be brought to the attention of the Government, and if necessary that equipment be purchased and leased to these companies.

In regard to coke: In December last advice was received that an order had been made by the American Railway Association prohibiting loading of coke in coal cars for Canadian destination. A representative of the Association was sent to Detroit, and as a result of the action taken munition plants were kept going. In fact, during the month of March, the movement was increased one hundred per cent. over that of any previous month. Assistance was also rendered members in regard to the movement of bituminous coal through both the Niagara and Detroit gateways.

Express: Specifications for Corrugated and Fibreboard Containers.

After a number of conferences between the Express Companies and a committee representing the manufacturers, held in the Association offices, specifications have been adopted, which it is believed will be of advantage to all concerned. The result is a better understanding between manufacturers themselves, and a removal of their difficulties with the companies.

General.

Other express matters dealt with were: Revision of Classification on Castings, Modification of the Regulations Governing so-called "Inflammable Goods," Fish Rates from Winnipeg and other points to Eastern Canada, Revision of the Ratings on Light and Bulky Goods, and the Rules Governing Same.

Protests were also filed against the proposal to discontinue wagon service on certain carload shipments, and to increase the carload minimum on certain commodities.

A number of other changes in both ratings and conditions of carriage are now under consideration.

Delivery Limits. An extension of the delivery limits from the City of Regina were secured. Extensions at other points are now under consideration.

Refrigerator Car Traffic—Charges for Ice and Salt.

The final hearing in this matter took place in December last, and all packers were advised thereof. The new tariffs, which have been under suspension for over a year on the application of the Association, involved a very large increase in these charges, amounting to approximately $300,000 annually, according to an estimate of the Chairman of the Railway Commission. Your Committee is pleased to report that the Judgment and Order of the Board has just been received (June 1st), disallowing the tariffs complained of. Briefly, this means there will be no increase in the present charges for this service.

Follow Lot Rule.

The Railways, some time ago, withdrew from their commodity tariffs the application of Rule 3 of Canadian Freight Classification known as the "Follow Lot Rule." Under this rule when a shipper has a consignment of freight classifying fifth class or higher in carloads, minimum 20,000 pounds, for one consignee at one destination, he has the right to a carload rate on the entire consignment, provided the first car is

loaded to the classification minimum. A protest was filed with the Railway Commission, and the Board has recently directed the continuance of the application of the rule subject to the following changes:

That the minimum shall be not less than 24,000 pounds per car.

In lieu of the words "provided that the first car (or cars) is loaded to the Classification minimum," the following shall be substituted—"provided that each car, except the car carrying the excess, must be loaded to its visible or marked capacity."

The discontinuance of the application of the rule would have seriously affected a large number of our members.

Increased Cartage Charges.

The cartage charges on less than carload shipments at points in Eastern Canada were increased on March 1st, due notice of which was sent us by the Railways and all members advised, as follows:

	Present.		Proposed	
	C.L.	L.C.L.	C.L.	L.C.L.
Montreal	4c	4c	4½c	per 100 lbs.
Toronto	3¼c	3¼c	4c	" " "
Other cartage points	3c	3c	3½c	" " "
Minimum charge (smalls)	20c		23c	

There have also been added quite a number of articles to the list of exceptions. No opposition was offered to the increase.

Export Rates—Iron and Steel.

An increase was proposed in these rates, effective October 1st last, which did not correspond with the increases suggested from contiguous United States territory to the Atlantic Seaboard. As our members had not been consulted an application for suspension was made and granted. This stood until the Interstate Commerce Commission, which had taken similar action, disposed of the question in the United States, and revised tariffs have since gone into effect.

Heated Car Service.

A general revision and extension of this service was proposed some time ago by the Railways, but as very substantial increases in the existing charges were suggested, an appeal was made to the Commission. The result was a material reduction in the proposed increases.

Settlement of Claims.

The Department assisted materially during the year in securing favorable settlement of a number of claims, amounting in all to $10,098.15.

An Important Decision—Failure to Carry Properly.

The Walter M. Lowney Company, Limited, shipped a carload of chocolate confectionery to Vancouver in 1914 in a refrigerator car, and gave positive instructions not to ice it in transit. Notwithstanding this it was iced at several points west of St. Paul. The defendant claimed that the damage was due to defect or inherent vice in the goods themselves. The judge did not agree with this, and held that the Company defendant was responsible for the safe carriage and delivery of these goods, not only over its own line, but over connecting rails between Montreal and Vancouver.

Joint Rates.

Although the question of joint rates has been before the Board of Railway Commissioners for some years it has not yet been definitely disposed of. Several propositions have been submitted by the Railways, but none of them have proved satisfactory. The more recent delay in dealing with the question, it has been explained, is due to the unusual pressure of other matters during the past year.

Steamship Service via Panama Canal.

The Honorable, the Minister of Customs, has announced that two wooden vessels are now being built in Vancouver for the Dominion Government as the nucleus of a freight-carrying service between the Atlantic and Pacific Coasts via the Panama Canal.

General.

The carriers are constantly revising their tariffs, and where possible increasing the carload minimums for the purpose of effecting economies in the cost of operation. In this connection, and particularly in view of the shortage of equipment, your Committee has considered it wise to urge upon members to load cars, when possible, to their capacity.

Advice and assistance has been given members in regard to siding agreements, car supply, the movement of traffic and many similar questions with which manufacturers have to deal.

As an evidence of the extent to which the Department has been consulted, 3,190 letters and telegrams have been received during the first five months of 1917. This does not include tariffs, circulars or advices and similar documents. In many cases these communications lead to an extended correspondence in different directions.

All of which is respectfully submitted,

G. M. Murray, *Secretary.* James A. Riordon, *Chairman.*

J. E. Walsh,
Manager Transportation Department.

Discussion.

After the adoption of the report had been moved by Mr. Riordan and seconded by Mr. Campbell, Mr. Ingram, of Winnipeg, rose to explain why he was sorry he was unable to second the report. He believed it was due to a misunderstanding. The point at issue was recommendation recently made by the committee to the Board of Railway Commissioners, relating to the 15 per cent. advance in freight rates.

"Now, our position in connection with this matter is this: The conditions in Western Canada are different from a transportation standpoint than in the east. The west thoroughly appreciates what the east has been up against during the past year in regard to boycotts, in regard to poor service and things of that nature. In the west we have not had the same difficulties from that standpoint that you have had in the east. However, in Western Canada we have much higher rates, proportionately speaking, than you have in the east.

"Another thing that should be borne in consideration by you gentlemen, is the fact that manufacturers and people who are doing business in Western Canada pay the freight on anything that comes to Western Canada and is sold to the consumers here. Consequently the action taken by the committee in making certain recommendations to the Board of Railway Commissioners has been tantamount to practically voting that the people in Western Canada should pay for something without giving us hardly an opportunity to vote on it ourselves."

Mr. Ingram also referred to the recent application of the railways for an increase on various commodities between the east and west and increased demurrage charges, etc. They in the west decided that, instead of dealing with the various applications for increases separately, all should be lumped together and but one increase be dealt with. This policy was

recommended to the committee in Toronto but was not considered. The affair left a wrong impression on the minds of western business interests, who felt that the Association was acting for the men in the east and was not giving the recommendations from the west the consideration they felt they deserved.

Mr. Riordan, chairman of the committee, defended the committee's action. He referred to the circular of May 12, notifying all members of the proposed increase and asking for opinions. The replies received were not numerous, indicating little interest, and the few that were received were mostly in favor of an advance, provided the railways gave a better service. Mr. Riordan believed the matter was contingent entirely on the action of the Interstate Commerce Commission in a similar application in the United States. If allowed there, it would be allowed in Canada. He referred to the greatly increased costs of railroad maintenance and operation and believed it was only fair to allow the increase.

Mr. Ingram, speaking again, said he did not want to be misunderstood. He did not deny the railroads anything they were entitled to and was prepared to leave the decision to the Board, who, he said would be fair and just. There were, however, differences in conditions between east and west. "I still contend," he said, "for what I said before. I believe on a matter of this kind, where any committee at Toronto is going to speak for the National organization, in order to hold unity in that organization, you must give the west, where they are going to be directly affected, a chance to voice their sentiments."

Some discussion followed as to whether a long enough time had been given to enable members to answer the circular of May 12.

Mr. Parsons concluded the discussion by suggesting a compromise. "It seems to me," said he, "that, if they consider to-day in the west that they are not just on the same footing as those in the east, it might be very easy to represent to the Board of Railway Commissioners that the western interests do not just feel that they can comply or can concur in the views of the eastern men. I don't see why that can't be put before the Board of Railway Commissioners. Let the west state their views are somewhat conditioned upon what they have not had to face during the past winter, as compared with the east, and in that way I think the Board will consider it. But, it should also be pointed out, as Mr. Ingram, who has been acting as the mouthpiece for the Prairie Provinces branch has said, that they would be quite willing to put it up to the Commission."

The president, in putting the motion, made some comments on the situation. He expressed sympathy with Mr. Ingram's position, but pointed out that manufacturers in the Maritime provinces had the difficulty of long hauls to contend with quite as much as manufacturers in Winnipeg. The question of service was of first importance and, if a 15 per cent. increase would ensure better service, then it should be promptly granted. Mr. Cantley also referred to the shortage of locomotives and cars, which was the crux of the whole situation.

Mr. A. B. Pollock, the well known manager in Kitchener, is becoming more extensively interested in the talking machine business. Although this line has engaged his attention for some time, it has now become so important that a separate company has been formed with an authorized capital of $250,000 to manufacture phonolas. The company will be known as The Phonola Co. of Canada, Limited, and we understand that Mr. Pollock has associated with him some other Kitchener manufacturers in this venture.

EXTENSION OF CO-OPERATION.

Forest Protection Makes Rapid Strides by Formation of New Associations.

A new link has recently been forged in the chain of co-operative forest fire protective associations, which are rendering such admirable service in protecting the forests of Quebec from destruction by fire. The new organization is the Laurentian Forest Protective Association, of which R. L. Seaborne, formerly an inspector in the St. Maurice Forest Protective Association, is manager, and Paul G. Owen is secretary-treasurer, with headquarters at Quebec.

The territory which will be protected by the Laurentian Association comprises some 15,000 square miles in the Lake St. John and Saguenay district, joining on the south-west the boundary of the St. Maurice Association and extending north-easterly to the watershed between the Sault au Cochon and Bersimis rivers. The western boundary is a line extending in a north-easterly and south-westerly direction about half-way between Lake St. John and Lake Mistassini. On the east, the association territory extends to the St. Lawrence River. The greater portion of the Laurentides Park is included within the exterior boundaries of the territory enclosed by these boundaries.

This makes a total of some 70,000 square miles in the Province of Quebec now under the protection of the St. Maurice, Ottawa River, Southern St. Lawrence and Laurentian Forest Protective Associations. A very large percentage of the licensed Crown timber land of the province is thus brought under improved methods of fire protection. The Provincial Government is a partner in this arrangement, in each case, in consideration of the protection afforded unlicensed Crown lands.—*C.L.*

NEW JOINT BOX.

In placing electric cables in underground conduits or in laying them on the bottom of a body of water, frequent joints are necessary. These are apt to be weak spots both electrically and mechanically unless properly made and protected. A new and improved type of joint-box or housing for use on submarine cables has recently been developed and perfected by the Standard Underground Cable Co. of Canada, Limited, and successfully used on submarine cables supplied the Halifax Electric Tramway Co., and the City of Ottawa Waterworks Department. It has also been used in the United States on submarine cables of the Atlantic City Electric Co., in the U.S. Ship Canal at Atlantic City, N.J., and the Wilmington & Philadelphia Traction Co., and Pennsgrove Light, Heat and Power Co. in crossing the Delaware River at Wilmington, Del.

This joint box is so designed that all mechanical stresses resulting from the action of tides, currents, etc., that usually tend to damage the cable at these points, are taken off the joint proper by long "take-up" rods on the joint box parallel to the cable, and transmitted to the steel wire armor on each side of the joint and to which armor the rods are rigidly connected by heavy iron clamps. As submarine cables, even under normal conditions, are subjected to severe mechanical stresses and have heretofore often failed first at the joints, this new device, which so far has proven very effective, offers a solution for a serious problem in submarine cable-laying.

MARITIME BRANCH'S ANNUAL

Meeting Was Held in St. John, N.B., on May 30th, and Several Important Resolutions Were Passed

THE annual meeting of the Maritime Branch of the Canadian Manufacturers Association took place in St. John, N.B., on Wednesday, May 30, and was well attended. The chairman of the branch, Mr. A. McColl, presided, and the visitors were welcomed to the city by Mayor Hayes.

The Secretary's report showed an expenditure for the year of $1,208, with receipts from membership of $2,655. The membership is now 151, an increase of four over the previous year.

The chairman, in his address, stated that the most important feature of the year's activities was the appointment of a permanent secretary. He felt that a committee should now be formed in each industrial centre to keep up the interest and increase the membership. He referred to the serious shortage of cars and stated that Mr. Hayes, of the Canadian Government Railways, had assured him that this situation would soon be relieved. He urged greater efforts to make the influence of the industrial interests of the Maritime Provinces felt over a wider area. A suggestion that a committee be appointed to promote safety associations under the Nova Scotia Workmen's Compensation Act, as a means of reducing assessments, was made and later acted on.

Mr. A. G. Robb spoke at length on the shipbuilding industry and presented a resolution on the subject at the morning session. This was laid over until the afternoon session.

Mr. L. W. Simms, of the New Brunswick Workmen's Compensation Commission, outlined the steps that were being taken to secure a model Act in that Province, and referred to the assistance that had been rendered by Mr. Wegenast in this connection.

Mr. J. D. Cudlip suggested the appointment of legislation committees in each province to look after the interests of the manufacturers, and on a motion being put, the idea was approved.

Mr. A. H. Wetmore directed attention to the proposed legislation at Ottawa, prohibiting the fixing of retail prices by manufacturers. He thought the Branch should pass a resolution opposing this legislation.

At the afternoon session, a number of resolutions were brought in, discussed and carried, and officers were elected. The latter are:

Chairman—W. S. Fisher, St. John.

Vice-Chairmen—E. E. Shaw, Sydney; L. W. Simms, St. John, and C. C. Starr, Halifax.

Executive—S. E. Elkin, St. John; Clifford McAvity, St. John; C. W. Fawcett, Sackville; A. D. Ganong, St. Stephen; Angus McLean, Bathurst; W. F. Humphrey, Moncton; H. S. Crowell, Yarmouth; A. R. McPherson, Windsor; Bruce Stewart, Charlottetown; Arch. McColl, New Glasgow; C. M. Crochett, New Glasgow; R. H. McKay, New Glasgow; J. T. Cumming, New Glasgow; C. S. Cameron, Sydney; H. R. Silver, Halifax; D. R. Turnbull, Halifax; C. S. Sutherland, Amherst; Geo. T. Douglas, Amherst; A. G. Robb, Amherst.

The appointment of local executives in the various centres was left to the Executive.

A motion to have the Executive endeavor to have a branch of the Bureau of Scientific Research located in the Maritime Provinces was passed.

A motion was also carried to appoint a committee of five to deal with matters pertaining to the development of export trade.

It was decided to hold a fall meeting of the Branch in Sydney.

The following resolutions were passed:

Death of James Pender.

RESOLVED, that the Maritime Branch of the Canadian Manufacturers Association, hears with deep regret of the sudden death of Mr. James Pender, one of the oldest and most active members of this organization, and one who, as a pioneer of the wire nail industry of the Maritime Provinces, has done so much toward the advancement of the Maritime industrial interests, generally.

Fixing Re-sale Prices.

RESOLVED, that the Maritime Branch of the Canadian Manufacturers Association endorse the resolution passed at the joint meeting of manufacturers, wholesalers, and retailers, held at Ottawa, on February 6, which reads as follows:

That it is the unanimous opinion of this joint meeting, consisting of Manufacturers, Wholesalers and Retailers, here assembled, that the present channels of trade through which manufacturers' products are distributed, namely, the wholesale and the retail trade, to the consumer, are the most economic and the safest and they afford the greatest convenience, and are altogether in the best interests of the public.

In order to demonstrate the correctness of this view, we recommend that a "Commission of Inland Trade," with the authority to investigate, and wherever necessary regulate the same, be appointed by the Government.

And that three persons, who will make quick decisions, which will inspire the confidence of the public, be appointed thereon; also that a "Branch of Inland Trade" be established in the "Department of Trade and Commerce."

FURTHER RESOLVED, that the passage of the Bill introduced by Mr. Knowles, of Moosejaw, and now before the House of Commons, would, under present circumstances and without further investigation, as asked for in the above resolution, be unjust and inadvisable.

FURTHER RESOLVED, that copies of this resolution be forwarded to the proper Government authorities.

Shipbuilding.

WHEREAS the destruction of shipping, since the beginning of the war, is proving a very serious menace to the cause of Great Britain and her Allies, and whereas the British Government has taken steps under the management of the Imperial Munitions Board, to promote the building of ships in Canada;

BE IT RESOLVED, that the Maritime Branch of the Canadian Manufacturers Association, offer their assistance in any way that may be of service, to the Board of any Commission that may be appointed by the Dominion or Provincial authorities, in facilitating and expediting the work of obtaining information regarding the facilities and resources of the Maritime Provinces for either wood or steel shipbuilding;

FURTHER RESOLVED, that a copy of this resolution be forwarded to the Chairman of the Imperial Munitions Board at Ottawa and to any others who may be directly interested.

Returned Soldiers.

RESOLVED, that the Executive Committee of the Maritime Branch of the Canadian Manufacturers Association appoint special committees for New Brunswick and Nova Scotia to co-operate in every way possible with the Provincial Boards for securing employment for returned soldiers, and that a copy of this resolution, with the names of the several committees, be forwarded to the proper authorities.

Production of Foodstuffs.

RESOLVED, that the Maritime Branch of the Canadian Manufacturers Association, recognizing the urgent need for the increased production of foodstuffs, hereby places itself on record as willing to co-operate in any way possible with the farmers of the country, in their efforts in this direction.

Technical Education.

WHEREAS it has been proved in the industrial development of the leading civilized nations of the world, during the last half century, that Vocational Education has been one of the most effective instruments in assurance to a nation, of the trade among other nations, and

WHEREAS a Canadian Royal Commission on Technical Education and Industrial Training has unqualifiedly recommended that the Dominion assist the Provinces in establishing adequate systems of Vocational Education;

BE IT RESOLVED that the Maritime Branch of the Canadian Manufacturers Association urge the parent society in its impending national meeting, to consider such means of bringing about immediate action in regard to the establishment of Technical Education throughout the Dominion, in order that Canada prepare for the commercial struggle of the future, and follow up the advantages secured by our victory in arms.

CLEANABLE COLLARS.

A New Way of Reducing the High Cost of Living has been Devised.

The first hot or sultry day of spring makes man wish he didn't have to wear a collar. Especially if he is over average size. A hot room, a little exercise or a short walk and down goes the upright collar. And what is more unsightly than a wilted collar? For years man has put up with such conditions as his only redress was a rubber collar. But now a collar angel seems to have come to life. With the old rubber collar as a rough idea, a new collar has been developed. It no longer has the rubber look or smell, it looks exactly like a linen collar, is made in all the up-to-date styles, and the color does not change. It is made of regular collar fabric, but the surface is treated to make it cleanable instantly with a sponge, cloth or handkerchief. It can even be cleaned by holding it under a water faucet and rubbing the dirt off with one's fingers. In fact it can be cleaned while being worn.

Of course such cleaning cuts out the laundry bills, and as high-grade collars of this type will wear several months, they also reduce a man's collar cost, hence they are being worn by men of all classes. Motorists find them very convenient while on a tour, as road dust, oil, etc., can be removed from them in the washroom of the stopover hotel before going into the dining room.



PROMINENT MARITIME PROVINCES MANUFACTURERS IN ATTENDANCE AT THE ANNUAL MEETING OF THE MARITIME PROVINCES BRANCH

PRAIRIE PROVINCES BRANCH

A Brief Account of the Proceedings at the Annual Meeting of the Branch on June 11th

THE annual meeting of the Prairie Provinces Branch of the C. M. A. was held in Winnipeg on the evening of Monday, June 11th, with a large number of members in attendance.

A splendid and comprehensive address was delivered by the retiring chairman, W. R. Ingram, which dealt at considerable length with the activities of the Branch during the past year and suggested lines of work that might with advantage be taken up during the coming year.

Several speakers referred to the obligation which members of the Branch were under to Mr. Ingram for his devotion to the interests of the Branch and a hearty vote of thanks was passed in recognition of his services. The Secretary was instructed to have copies of his address printed and mailed to all members of the Branch.

Secretary's Report.

The Secretary referred briefly to the development of the year. The attention given to increasing the membership in the prairie provinces had resulted in the addition of 205 names to the list, bringing the total at May 31, 1917, up to 458. Sections of the Branch had been inaugurated in Regina, Moose Jaw and Saskatoon in Saskatchewan, and Calgary, Edmonton and Medicine Hat in Alberta. The chairman of each section became, ex-officio, a member of the executive committee of the Branch.

During the year a monthly circular letter was mailed to each member giving particulars of the subjects of general interest dealt with by the Branch during the month.

Sixty-two meetings were held during the year, of which seven were of the general membership and eleven of the executive committee.

Tariff.

The tarriff committee's report showed that several matters of importance to members of the Branch had been referred to the committee for action and, upon taking these up with the manager of the Tariff Department, in the majority of cases satisfactory adjustments had been effected.

Membership.

The membership committee's report referred to the increase in membership during the year and to the establishment of sections in the various centres. "The committee strongly recommends that the system of establishing local sections at principal points throughout the West and the election of a chairman thereto, who, by reason of his office shall become ex-officio a member of the Executive of the Branch, be continued and extended."

Legislation.

A lengthy report was presented by the Legislative Committee, which dealt with several matters affecting the well-being of members.

The Manitoba Workmen's Compensation Act was carefully watched and studied by the committee and the services of a solicitor were secured to see that a reasonable and fair interpretation of the Act was made. Meetings of members were held to consider the terms of the policy and premium rates. Many details were taken up with the Commissioner and satisfactory adjustments secured so that, at the present time, with a few exceptions, the Act is considered satisfactory. An effort was made to have the Act include the operations of wholesalers, but this was refused by the Law Amendments Committee of the Legislature.

A promise was secured from the Minister of Public Works that, wherever possible, Canadian materials and labor would be used in the construction of the Manitoba legislative buildings.

The committee appeared before a special committee of the Legislature on election laws and endorsed compulsory voting, registration by proxy and educational tests for voters, but opposed abolition of election deposits, continual registration and holiday on election day.

The committee secured an assurance from the Manitoba Government that it was not their intention to introduce a fair wage measure at the last session of the Legislature.

The committee opposed a bill prohibiting any person from acting as a private detective or special constable, unless they were registered with the Attorney-General. No act was passed.

Opposition was raised to the formation of a firemen's union in Winnipeg and up to the present time the city council has not recognized any such organization.

A bill limiting the installation, repair or maintenance of any element of an electrical service to fully qualified electricians, who had passed an examination before a Board of Commissioners, was opposed and an amendment was secured which will allow repairs to be made by the engineer on the premises. Also certificates may be granted to employees of manufacturers making repairs to electrical machinery and apparatus without passing a journeyman's examination.

The report also dealt with the Workmen's Compensation Act of Saskatchewan; the minimum wage bill of Alberta and certain amendments to the City of Winnipeg charter.

Transportation.

The Transportation Committee's report dealt with the new freight classification, a subject which has already been reported fully from month to month in the Transportation Section of INDUSTRIAL CANADA; icing charges for refrigerator cars; the teamster's strike; live stock rates; express rates on castings; heated car charges; fish rates to Eastern Canada; storage rates at head of lakes; increased demurrage rates, etc.

Officers.

The following officers were elected:

Manitoba, Vice-President—W. R. Ingram.
Saskatchewan, Vice-President—T. A. Potter.
Alberta, Vice-President—W. J. Magrath.
Branch Chairman—A. B. Stovel.
Vice-Chairman—N. W. Warren.
Executive Council—W. S. Fallis, W. A. Matheson, T. R. Deacon, W. R. Ingram, M. F. Christie, F. W. Drewry, Jas. Carruthers, H. R. Eade.
Chairman, Membership Committee—T. Boyd.
Chairman, Transportation Committee—W. R. Ingram.
Chairman, Insurance Committee—F. J. Baker.
Chairman, Tariff Committee—T. R. Deacon.
Chairman, Legislative Committee—Jas. McDiarmid.

INSVRANCE

FIRE LOSSES IN MAY.

Figures were Under those of April and of the Corresponding Month of 1916, and for the Year are Showing Favorably.

According to estimates compiled by the *Monetary Times* the fire losses throughout Canada during the month of May amounted to $1,163,110, as compared with $1,317,714 during April, and $1,850,205 during May, 1916. This brings the total Canadian fire losses for the first five months of the year to $8,460,089. The losses during the same period of the three preceding years were as follows:

1914	$12,229,478
1915	6,246,740
1916	9,641,960

The fire loss in May in the United States and Canada reached the sum of $24,968,800, according to the *Journal of Commerce*, bringing the aggregate for the first five months of this year up to $129,108,455, or $16,000,000 more than in the same period last year, and $48,000,000 more than in the five months' period in 1915. Three conflagrations at Atlanta, Sioux Falls and Bowie accounted for $7,000,000 of the total in May, 1917, which exceeded the loss in May, 1916, by $9,000,000. Unless there shall be a generous increase in premium income this year the outlook for an underwriting profit is rather unpromising.

SOLDIERS' INSURANCE.

Nearly Seven Millions were Paid by Canadian Life Companies Up to the End of 1916.

From reports of the Canadian representatives of insurance companies who were delegates at the convention of the Actuarial Association of America at New York, it appears that the highest mortality among Canadian troops has been in the infantry service, where, some of the actuaries said, the death rate at times reached 20 per cent. The lowest is in the medical corps.

Canadian and other insurance companies doing business in the Dominion paid out nearly $7,000,000 in claims up to December 31, 1916, according to Mr. A. B. Wood, actuary of the Sun Life Insurance Company.

The experience of Toronto upon the insurances issued by the city and by the companies accepting the risks is as follows, up to the date previous to the conquest, by the Canadians, of Vimy Ridge:

Incurred to Date—

Already paid	$1,782,594
Under adjustment	250,000
Incurred since Vimy (estimate)	500,000
Total	$2,532,594

The Companies' Experience—

	Paid.	Premiums Received.
Metropolitan	$721,000	$681,000
Ætna	88,000	133,094
State	10,000	38,500
Totals	$819,999	$852,594

DISASTROUS FIRE RECORDS.

Last Year Jersey City Headed the List, with a Per Capita Loss of $21.71.

Among the interesting statistics presented at the recent annual meeting of the National Board of Fire Underwriters were tables showing the per capita fire loss in the cities having the highest such losses in 1916 and in several previous years. In 1916 there were ten cities whose per capita fire loss exceeded $8.00. Jersey City, N.J., headed the list with a per capita loss of $21.71. Several cities in the list had gained the unenviable distinction of being in the high per capita loss class in at least three out of the last five years. It would seem that the cities falling in this group ought to receive particular attention from the fire underwriters.

RAILWAY FIRE PROTECTION WORK.

Some of the Experiences of 1916 Show that Satisfactory Work is Being Accomplished.

The railway fire protection work, in the establishment and administration of which the Commission of Conservation has co-operated with the Dominion Railway Commission, has produced remarkably satisfactory results. Under the provisions of the Railway Act, and the regulations of the Board, the railways subject to its jurisdiction have assumed full responsibility for the extinguishing of fires presumably due to railway causes.

During 1916, 558 fires were reported as originating in forest sections, within 330 feet of lines subject to the Railway Commission's jurisdiction, being 128 fires less than in 1915. Of these, 69 per cent. were definitely attributed to railway causes, 18 per cent. to known causes other than railways, and 13 per cent. to unknown causes. Of the 388 fires chargeable to railway causes, 101 fires, or 26 per cent., were incipient fires which did no damage. Two hundred and eighty-seven fires, or 74 per cent., were larger fires which burned over 11,290 acres, valued at $35,566. The total damage from all fires is estimated at $39,482. Of this the railways are charged with 90 per cent.; known causes other than railway fires, 8 per cent., and unknown fires, 2 per cent. Thus, on all lines subject to the jurisdiction of the Board throughout Canada, the forest fires definitely attributable to railway agencies did damage amounting to only $35,566—a remarkably good showing, considering the unfavorable weather conditions.

Of all fires reported, the causes were as follows: Locomotives, 61 per cent.; railway employees, 8 per cent.; campers and travellers, 7 per cent.; settlers, 8 per cent.; other known causes, 3 per cent.; unknown causes, 13 per cent.

The use of tank cars for fire-fighting purposes is now in effect on the Canadian Pacific, Grand Trunk, Temiskaming and Northern Ontario, and Canadian Government railways. Such equipment has proved its effectiveness and wider use is to be hoped for.

DOMINION INSURANCE ACT.

Revision of the Act of 1910 now being Considered, Several Sections being Subjected to Changes.

A bill has been introduced in the Dominion Parliament repealing the Insurance Act, 1910, and passing a new one in

its place. The new bill virtually re-enacts, with some changes, the existing Act. The amendment was considered necessary in consequence of a decision of the Privy Council that sections 4 and 70 of the Act were *ultra vires*. Section 4 of the old Act prohibits any insurance company or underwriters from transacting business in Canada without first obtaining a license from the Dominion Government. The Privy Council ruled that the Dominion had no power to interfere with a company not licensed from Ottawa but holding licenses from one or more provinces in which it transacted business. Section 4 has therefore been amended, eliminating the prohibition, but authorizing the Minister to grant Dominion licenses to companies complying with the requirements of the Act.

Under the existing Act it is a penal offence for any agent, broker or representative of a fire insurance company to divide or offer to divide his commission or remuneration with the assured or with any person claiming to have any influence or control in the placing of the business. Section 137 of the new Act has been amended to extend the penalty to the person receiving such share of commission or remuneration.

Section 70 prohibited under penalty any person or corporation from acting directly or indirectly for or on behalf of any company or underwriters not licensed by the Dominion. This included the solicitation of insurance to be placed in unlicensed companies, the delivery of policies, receipt of premiums, inspection of risks and adjustment of claims on behalf of companies not holding a Dominion license. The Privy Council decided that this also exceeded the powers possessed by the Dominion Government and the section has therefore been entirely eliminated, together with sections 71, 72 and 73, which related thereto. Section 11 of the new Act, however, prohibits any company holding a Dominion license or any alien from acting on behalf of an unlicensed company.

The amended Act extends the powers of the Superintendent of Insurance in the regulation of companies licensed by the Dominion. Among other new sections is one which limits the manner in which Canadian companies may publish their financial statements. Any notice or publication which contains a statement of the company's subscribed capital must also mention the amount of capital actually paid in, and no such notice or publication shall be issued which includes the capital in with the surplus, unless the amount of such paid or subscribed capital be specifically stated as being so included.

CANADA'S WOOD PULP RESOURCES.

Commission of Conservation Undertakes a Study of Conditions Looking to Perpetuation of Supply.

Canada is undoubtedly to become one of the world's greatest sources for the supply of wood pulp and paper. This industry has grown by leaps and bounds during recent years, and further large developments are to be anticipated, both in the east and the west. This will mean a constantly increasing strain upon our forest resources, and must result in careful consideration as to whether very large areas, in which the heaviest cutting is being done or is to be done, are not in danger of depletion.

The ravages of fire have been very serious in our pulpwood forests, and the question arises also as to whether present methods of cutting are sufficiently controlled to ensure the reproduction of another forest on cut-over lands. The area of pulpwood lands in Canada is so great that, if fire can be kept out and the reproduction of the forest secured through proper regulation of the cutting methods, the annual growth will provide the basis for an enormous development of the pulp and paper industry for all time to come. This means the practice of forestry, of which we have as yet in Canada only the beginnings.

The Commission of Conservation has started a study of these fundamental problems. This investigation will have for its objects the determination of the extent to which cut-over pulpwood lands are reproducing valuable species in potentially commercial quantities; the effect of fire on reproduction, and the rate of growth of the reproduction present, to determine how long after cutting one may reasonably expect another crop. The answer to these questions should go far in determining what additional measures are necessary to place the business of pulpwood production upon a thoroughly permanent basis.

The work for this season will be under the direction of Dr. C. D. Howe, of the Faculty of Forestry of Toronto University. A co-operative arrangement has been made, under which the first part of the study will be made upon the limits of the Laurentide Company, whose forester, Mr. Ellwood Wilson, will co-operate in the field investigations. It is expected that similar studies will be made in other sections of the pulpwood forests of Canada during succeeding years. The results will undoubtedly be of the greatest interest to all who are directly or indirectly concerned in the perpetuation of this great industry.—*C.L.*

LIBERTY LOAN BONDS.

How One United States Firm Encouraged Its Employees to Subscribe for these Securities.

During the recent Liberty Loan campaign in the United States many manufacturers gave their employees assistance in the purchase of the bonds. For instance it is reported that the Economy Fuse and Manufacturing Company, Chicago, made it possible for every member of the organization, numbering over 200, to purchase bonds, and a total of $80,000 worth was subscribed for.

The company evolved a liberal selling plan, based on weekly payments proportioned to the wage or salary of the individual. In some cases the payments are as low as twenty-five cents a week. In addition, the company will pay the last $5 of the purchase price as a bonus to the employee who remains in the company's employment the required length of time. It is provided that where an employee leaves the employ of the company before his subscription is entirely paid for, the money paid in will be refunded together with six per cent. interest.

Mr. A. L. Eustice, president of the Economy Fuse and Manufacturing Company, expressed himself as being highly gratified with the success of the plan as it worked out in his plant.

THE DANGER OF SLEEVES AND TIES.

Although time and again workmen have been warned regarding the danger of loose clothing when working around machinery, it appears that many of them persist in ignoring the danger, reports the *Scientific American*. As a result 986 workmen were killed in the United States last year by being drawn into the wheels of machinery or thrown to death when parts of their clothing became caught in rotating members. Loose sleeves and neckties are prolific sources of danger, and should not be tolerated for a single moment by the careful worker.

TRANSPORTATION

By J. E. WALSH

THE USE OF TAGS.

Express Companies Deprecate Tags Except Where it is Impossible to Mark Packages Otherwise.

The Express Companies have issued a pamphlet entitled "Inside information," dealing with the use of tags for shipments and the proper marking thereof. The following is an extract from the pamphlet:

When the address on an Express shipment is obliterated or detached, it is sent to "Without Mark Bureau" and search for a clue is conducted by experts.

Investigation proves that the majority of such cases were addressed with tags insecurely attached or of such poor quality that they were torn off—a few were addressed with chalk and lead pencil, which rubbed off.

Carelessness in marking—false economy in purchasing tags—using light string instead of twine or wire—deprives both shipper and consignee of the service expected. The result is delay, dissatisfaction, tracing, claims, and perhaps the loss of a customer.

When shippers enclose in packages a copy of the invoice, a duplicate label, or a slip of paper showing address of both shipper and consignee, the Express Company has "Valuable Inside Information" which cuts down delay if outside mark is lost.

DO NOT USE A TAG if the nature of your shipment will permit marking address on it in ink, by pasted label, or with marking brush.

Never mark address with chalk or pencil.

In the interest of efficient EXPRESS SERVICE your co-operation is requested.

EFFICIENT USE OF CARS.

Transportation Department of American Road Brings Important Circular to Attention of Shippers.

As part of the campaign to bring about more efficient use of the carrying capacity of freight cars, the Transportation Department of the Pennsylvania Railroad is distributing, through station agents on all portions of its lines, copies of the special circular, relating to this subject, issued by the United States Department of Agriculture. The circular will be placed in the hands of farmers, truckers, fruit growers, shippers, consignees, brokers, buyers, boards of trade, chambers of commerce, merchants' associations and other commercial organizations throughout the territory covered by the railroad and its principal connections.

The Department of Agriculture, in the circular, urges the pooling and consolidation of shipments, in order to make up full carloads. The necessity of loading and unloading promptly is also dwelt upon. Practical methods are pointed out by which perishable farm products may be shipped in quantities sufficient to utilize the full carrying capacity of cars without injuring the contents.

"The trade practice of placing an order for the tariff minimum weight of a given commodity is difficult to change in some cases," says the circular, "and it is recognized that small markets in many cases cannot take a maximum carload of certain commodities, but there are many ways in which shippers and distributors can get more work out of a car at the present time.

"Shipping associations can pool the output of all their members and load cars of some commodities to full capacity for large markets. Wholesalers and car-lot distributors can place orders for carloads of a greater quantity than was customary in the past. Shippers should load and unload cars within the shortest possible space of time, and every individual having to do with the diversion of cars in transit should reduce delay at diversion points to the lowest possible minimum. Against the increased value of a better market found while holding a car in transit must be balanced the loss due to deterioration of the product while the car is held and the sometimes greater loss of another shipper whose product spoils for lack of the car which the first shipper is holding.

"Association users of fertilizers, packages and package material should order cars of full maximum capacity loading whenever possible. Buyers and users of cotton could assist by ordering in lots of 100 bales instead of lots of 50 bales.

"The present is a time for the closest co-operation of all interests for the most efficient utilization of cars and not a time to discuss relative responsibility for car shortage. One car used with the risk of damage from overloading is better than total loss of the commodity for lack of the one car in which to ship."

FOLLOW LOT RULE.

Rule 3 of Canadian Freight Classification 16 has been Amended in Some Important Particulars.

In the June issue of INDUSTRIAL CANADA, there was published a brief outline of the changes made by the Board of Railway Commissioners' General Order No. 189 in regard to Rule 3 of Canadian Freight Classification No. 16, commonly known as the "Follow Lot Rule." Since that time the amended rule has been published in Supplement No. 9 to Classification No. 16, effective June 11th, 1917. However, the situation as outlined in the June issue is not the same as has been created by Supplement No. 9, the difference being due to the third paragraph, which reads as follows:

"If, however, the freight is of such a bulky nature as to make it impossible to load the first car to the classification minimum, charges must then be assessed at L.C.L. rate, actual weight, but subject to the Classification minimum weight at carload rate as a maximum for each car."

In view of this, any shipments made under the amended Follow Lot Rule must comply with the following conditions:

1. The shipment must weigh more than a minimum carload.

2. The article or articles in the shipment must be rated fifth class or higher, as shown in Canadian Classification.

3. The article or articles shipped must be provided with a minimum carload weight of 24,000 pounds or more as shown in Canadian Classification.

4. Each car, except the car carrying the excess must be loaded to the visible or marked capacity.

5. Each car, except car carrying the excess must be loaded to at least the minimum weight prescribed for the article or articles shipped.

Exception: The rule does not apply on articles loaded in refrigerator or tank, or on flat or gondola cars.

The charge under the amended rule will be made up as follows:

1. Minimum weight (or actual weight, if higher) at carload rate on first car or cars.

2. Actual weight, carload rate on car carrying the excess.

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

864. Horse Blankets.—A manufacturers' agent, residing in Winnipeg, is looking for a good line of Canadian-made horse blankets to add to his list of agencies.

865. Paper Excelsior.—A Western confectionery manufacturer would like to obtain supplies of this material from Canadian manufacturers.

866. Button Moulds.—An Ontario manufacturer would like to get in touch with some Canadian manufacturers who can supply wooden button moulds.

867. Poplar Timber.—A well-known organization has quantities of standing poplar timber to dispose of in Northern Ontario, and would like to communicate with manufacturers who use this type of timber.

868. Hardwood Timber.—A well-known organization has quantities of hardwood timber to dispose of in Northern Ontario, and would like to communicate with manufacturers who use this type of timber.

869. Duck Cloth.—A large Montreal Printing Company would like to get supplies of thin duck cloth suitable for labels, from Canadian manufacturers.

870. Corset Stay Tips.—An inventor of tips for the repair of corsets is desirous of disposing of the rights of the manufacture and sale of the articles in Canada.

EXPORT TRADE ENQUIRIES.

871. New Zealand Trade.—A large firm of wholesale merchants would be glad to correspond with any Canadian firm desirous of opening up business in New Zealand in motors, cycles and accessory lines; also in hardware and oils, groceries, sundries and boots and shoes. Their travellers cover the whole of New Zealand, and they have selling agents in all the principal towns. New Zealand and New York references are offered.

872. Agency.—A well-known Australian firm is desirous of getting into communication with Canadian firms who desire representation in Australia, particularly in such lines as tools of trade, lubricators, grease cups, pressed steel pulleys, pressed steel tubular wheelbarrows, hacksaw frames and blades, stocks and dies, machine tools and builders' hardware.

873. Agency.—A South African company would like to hear from Canadian manufacturers of wood pulpboard who are in a position to undertake business in South Africa.

874. Agency.—A well-recommended agent in France is desirous of getting some Canadian agencies for food products and similar lines.

THREE FACTORY BUILDINGS

FOR SALE OR LEASE

FACTORY NO. 1:—Three stories, modern mill construction, floor space 15,000 sq. feet, light on all sides; adjacent to railway tracks, forge shop in rear, equipped with steam heating plant, elevator, wired for power and light. Suitable for metal working industry.

FACTORY NO. 2:—Two stories and basement, situated on railway siding; steam heating equipment, modern engine; wired for power and light, elevator, light on all sides; floor space 15,000 sq. feet. Has a large lumber shed and dry kilns adjoining. This building suitable for woodworking industry.

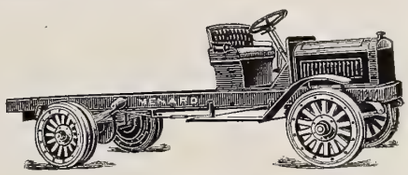
FACTORY NO. 3: — Two stories, floor space 11,000 sq. feet; steam heating equipment, elevator, wired for power and light; suitable for light manufacturing industry.

For further particulars, etc., apply

Secretary

BOARD OF TRADE

WOODSTOCK, ONTARIO



The Menard Motor Truck is *MADE IN CANADA*

Every owner of a MENARD is a booster for the MENARD

Write for catalogue and prices

Menard Motor Truck Co., Ltd.

Windsor - Ontario, Canada

875. Russia.—A native of Russia, who claims to have experience in the drug trade, also in hardware, glassware, china, etc., would like to get in touch with Canadian manufacturers who wish to be represented in Russia. This gentleman has spent some time in Canada learning the English language and studying trade conditions, and is now in a position to undertake sales work in Russia. If necessary, he could also undertake to act as buying agent for raw materials in that country.

876. Yellow Phosphorus.—A New York house, with English and Dutch connections, desires to get in touch with anyone in Canada producing yellow phosphorus sticks or cakes.

877. Steel Conduit.—A well-known house of manufacturers' representatives in Sydney would like to hear from Canadian manufacturers of ⅝-inch. enameled close joint steel conduit, who are not already represented in Australia.

878. Box Shooks.—A New York export house would like to hear from Canadian manufacturers of shooks who are in a position to undertake export business.

879. Agencies.—An Australian, at present in New York, who has had a long experience in commercial work in Australia, desires to get in touch with Canadian manufacturers who may desire representation there.

880. Sweden.—A gentleman, formerly connected with the Swedish Consular service, has now located in Western Canada and is deeply interested in establishing more intimate business relations between Canada and Scandinavian countries. He claims to be in a position to advise as to the suitability of goods for the Scandinavian market, and will be glad to put enquirers in touch with the buyers.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

881. Boots and Shoes.—A native of Russia, residing in Canada, and speaking both Russian and English fluently, would like to get in touch with Canadian boot and shoe manufacturers, or some other lines, with a view to acting as their special representative or traveling salesman in Russia. Canadian references furnished.

882. Motor-Cycles, Knitting Machines, Etc.—A firm at Florence would represent manufacturers of motor-cycles, knitting machines, sewing machines, typewriters, cycle parts and accessories.

883. Woodworking Machinery.—Works at Florence wishes to buy woodworking machinery for making office and school sundries.

884. Hardware, Ironmongery and Metals.—Agents at Florence would handle the above on commission.

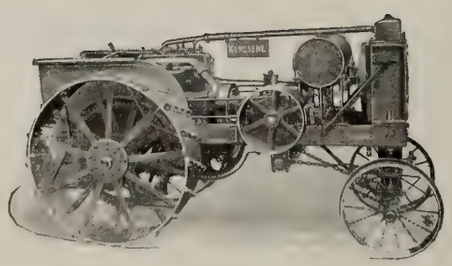
885. Hardware, Ironmongery, Etc.—Party at Naples would buy for his own account hardware, ironmongery, fire bricks, machine tools.

886. Chemicals, Colors, Varnishes, Etc.—A commission agent at Caglieri (Sicily) would represent manufacturers or exporters of chemicals, colors, varnishes, soap-making material, mineral oils, linseed oils, iron, steel, coals, enameled hollow-ware.

887. Machinery and Tools.—A party at Rome would represent (or buy for own account) manufacturers of machinery and tools.

SAWYER-MASSEY
TEN-TWENTY GAS TRACTOR

The only Farm Tractor of Ten-Twenty Horse Power or less manufactured in Canada.



A number have been purchased by the Ontario Department of Agriculture and working on Lakeview Farm, Bronte, and several other localities in Ontario.

Descriptive literature concerning our tractors gladly sent upon request.

SAWYER-MASSEY CO., Limited

Builders of Steam and Gas Tractors, Threshers and Road-Making Machinery

HAMILTON - CANADA

Branch Offices and Warehouses:
Winnipeg, Manitoba; Regina, Saskatchewan; Calgary, Alberta; Buenos Aires, Argentina.

THE MERCHANTS BANK OF CANADA

Statement of Liabilities and Assets at 30th April, 1917.

LIABILITIES

1. To the Shareholders

Capital Stock paid in	$ 7,000,000.00
Rest or Reserve Fund	7,000,000.00
Dividends declared and unpaid	178,365.00
Balance of Profits as per Profit and Loss Account submitted herewith	421,292.96
	$14,599,657.96

2. To the Public

Notes of the Bank in Circulation	9,483,468.00
Deposits not bearing interest	27,101,587.86
Deposits bearing interest (including interest accrued to date of statement)	65,000,484.42
Balances due to other Banks in Canada	628,863.08
Balances due to Banks and banking correspondents in the United Kingdom and foreign countries.	3,904,690.72
Bills payable	.....
Acceptances under letters of credit	411,806.78
Liabilities not included in the foregoing	.....
	$121,130,558.82

ASSETS

Current Coin	$ 4,766,438.82
Deposit in the Central Gold Reserves	3,500,000.00
Dominion Notes	7,650,790.50
Notes of other Banks	793,367.00
Cheques on other Banks	5,674,828.67
Balances due by other Banks in Canada	2,635.33
Balances due by Banks and banking correspondents in the United Kingdom	61,225.79
Balances due by Banks and banking correspondents elsewhere than in Canada and the United Kingdom	2,413,100.10
Dominion and Provincial Government securities, not exceeding market value	3,862,507.19
Railway and other Bonds, Debentures and Stocks, not exceeding market value	3,964,251.24
Canadian Municipal securities, and British, Foreign and Colonial public securities, other than Canadian	11,263,196.20
Call Loans in Canada on Bonds, Debentures and Stocks	4,627,863.57
Call Loans elsewhere than in Canada	3,461,420.47
	$52,041,624.88
Current Loans and Discounts in Canada (less Rebate of Interest)	62,737,958.74
Current Loans and Discounts elsewhere than in Canada (less Rebate of Interest)	377,582.42
Liabilities of customers under letters of credit as per contra	411,806.78
Real Estate other than bank premises	294,197.07
Overdue debts, estimated loss provided for	149,039.68
Bank Premises, at not more than cost less amounts written off.	4,617,400.23
Deposit with the Minister for the purposes of the Circulation Fund	375,000.00
Other Assets not included in the foregoing	125,949.02
	$121,130,558.82

K. W. BLACKWELL, *Vice-President.*
E. F. HEBDEN, *Managing Director.*
D. C. MACAROW, *General Manager.*

Report of the Auditor to the Shareholders of The Merchants Bank of Canada

In accordance with the provisions of sub-Sections 19 and 20 of Section 56 of the Bank Act, I report to the Shareholders as follows:—

I have examined the above Balance Sheet with the Books of Account and other records of the Bank at the Chief Office and with the signed returns from the Branches and Agencies.

I have checked the cash and verified the securities of the Bank at the Chief Office against the entries in regard thereto in the books of the Bank as on 30th April, 1917, and at a different time during the year and found them to agree with such entries. I have also attended at some of the Branches during the year and checked the cash and verified the securities held at the dates of my attendances and found them to agree with the entries in the Books of the Bank with regard thereto.

I have obtained all the information and explanations I have required. In my opinion, the transactions of the Bank which have come under my notice have been within the powers of the Bank, and the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs according to the best of my information and the explanations given to me, and as shown by the books of the Bank.

VIVIAN HARCOURT,
(of Deloitte, Plender, Griffiths & Co.),
Auditor.

Montreal, 21st May, 1917.



The Right Way to Use a Time Recorder—"a Stream"

This keeps everybody satisfied. You shouldn't overload a Time Recorder any more than any other machine.

Experience shows that from 140 to 150 employees is the number per Recorder found to be practical. Any number over this is unprofitable to the firm and is unfair to the employee.

The first cost of an extra Recorder to meet your needs is small when the money value of the time saved is considered.

Many a good and valuable employee has been lost to his employers because he didn't relish lock-stepping in a queue to get at an over-worked Recorder.

The way to make money is by a shrewd investment—that's certainly an adequate Time Recording System.

We sell them on easy terms. They can easily save their instalments every month. Let us send you our newest folders.

The International Time Recording Co. of Canada, Limited

Anderson St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG:
227-231 McDermot Avenue

VANCOUVER:
305 Birks Building
(Opposite C.P.R.)

MONTREAL:
Cartier Bldg.
Cor. McGill and Notre Dame Sts.

INTERNATIONAL TIME SYSTEMS



The Wrong Way to Use a Time Recorder—"a Bunch"

This costs everybody money. It causes dissatisfaction. Every employee wants to be "first at the clock."

Supposing this firm spent $250 on a time recording equipment to serve 400 employees when they should have spent say $500.

Put $250 in their pockets on the Time Recorder they didn't buy, of course! Wait a minute.

What about the employees' mental attitude as they squirm and push into line to register? How about the time they lose slowing down their work and quitting before the hour? If there's any waiting to be done at an over-crowded Recorder it will be in your time, not their's.

Suppose 400 employees lose an average of 4 minutes each per day — 1,600 minutes at say 40c per hour—a daily loss of $10.60. Pretty stiff, isn't it?

Let us quote you on a suitable time-and-money-saving International Time Recording outfit for YOUR business.

The International Time Recording Co. of Canada, Limited

Anderson St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG: 227-231 McDermot Avenue

VANCOUVER: 305 Birks Building (Opposite C.P.R.)

MONTREAL: Cartier Bldg. Cor. McGill and Notre Dame Sts.

888. **Industrial and Agricultural Machinery, Etc.**—A party at Rome would represent manufacturer of industrial and agricultural machinery, electric motors, gas stoves, chemicals, pharmaceutical specialties, artificial silks, etc.

889. **Mattress Wire.**—A Liverpool firm wish to get into touch with manufacturers of the above.

890. **Imitation Leather.**—A Buenos Aires firm of manufacturers' representatives desire to be placed in communication with manufacturers of imitation leather.

891. **Iron Tubes for Beds.**—A Buenos Aires firm of manufacturers' representatives desire to be placed in communication with manufacturers of iron tubes for beds.

892. **Leather.**—A Buenos Aires firm of manufacturers' representatives desire to be placed in communication with manufacturers of leather goods, sole leather, upper leather, tanned goatskins. Articles for boot and shoe manufacturers.

893. **Rake Handles.**—A manufacturer of rake handles, who has been getting squares from the United States, wishes to secure Canadian supplies. The following specifications are given: 82 inches by 1⅛ by 1⅛ inches of clear stock, free from knots and other imperfections. We use these in hardwood, beech, birch, or maple, and in second growth white ash.

894. **Binders, Reapers, Mowers, Ploughs.**—A company in Kiev, Russia, wishes to obtain the agencies for South Russia of Canadian manufactures of binders, reapers, mowers, ploughs and similar agricultural implements.

895. **Goloshes and Rubber Boots.**—A Genoa merchant requires to buy goloshes, rubber boots.

896. **Sulphate Pulp Mill Machinery.**—A London firm wishes to be placed in correspondence with actual Canadian manufacturers of sulphate pulp mill machinery and plant, which is required for shipment to Russia.

897. **Three-ply Wood, Alder, Birch, Etc.**—A London firm who wish to place orders for Canadian 3-ply wood, alder, birch, etc., for direct shipment to South Africa, invite offers from actual Canadian manufcturers.

898. **Axes, Etc.**—An important concern in Newfoundland desires to be put in touch with Canadian manufacturers of axes and axe-handles.

899. **Lanterns.**—Canadian manufacturers in a position to supply kerosene oil lanterns are asked to communicate with a Newfoundland inquirer.

900. **Machinery.**—A British engineering firm in Vladivostok wish to get in touch with Canadian firms supplying various kinds of machinery.

RIDOUT & MAYBEE
Solicitors of Patents
Counsel, Solicitors and Experts in
PATENT SUITS
Agencies in the leading countries of the World.
EDWARD MAYBEE, Mech. Eng. J. F. EDGAR, Counsel.
59 YONGE STREET, TORONTO

THE GIDLEY BOAT CO., LTD.



Builders of
COMMERCIAL AND PLEASURE CRAFT
: : Lifeboats and Life-Saving Equipment : :

PENETANG : ONTARIO : CANADA



GREAT BRITAIN.

REPORT OF TRADE COMMISSIONER.

(*Mr. Norman D. Johnston.*) BRISTOL, March 27, 1917.

SAMPLES, CATALOGUES AND PRICE LISTS REQUESTED.

It is planned to use a room in the office almost entirely for the exhibition of catalogues and price lists of Canadian manufactures. In possession of these it will be very much easier to indicate to importers in the United Kingdom what style of work is being done in Canada and to create a more vital interest in the different products. Canadian manufacturers are therefore invited to send to this office latest catalogues and price lists showing f.o.b. Canadian port quotations. When these are received all firms likely to be interested will be notified and inspection invited.

Now is the time for firms who wish to engage in export trade after the war to make plans for the future and those who have catalogues and price lists on the spot and have made arrangements as to representation, etc., will be in the most favourable position to obtain a share of the United Kingdom trade after the close of hostilities. Canadian manufacturers are therefore urgently requested to give this matter their very serious consideration.

Are YOU ready?

We are ready—with the most complete organization: Artists, Photographers, Writers, Engravers, Printers—all under one roof—all ready to serve your best interests in the production of effective Advertising.

Ask us for ideas when planning your next Catalogue or other Sales Literature. Our experience will be a big aid.

BRIGDENS LIMITED

TORONTO and WINNIPEG

Condensed Advertising

MANUFACTURING BUSINESS FOR SALE.

Good established knitting factory for immediate sale on account of owner's sickness. Apply to Box 963, INDUSTRIAL CANADA Office, Toronto.

A MARKET IN UNITED STATES.

Mr. Manufacturer, Are you represented in the States? Have you a meritorious product for the New York market, and are you equipped to handle American business? If so, a responsible and live New York firm would market your product on a nation-wide basis. Interview by mail only. Caravel, c/o Queen's Hotel, Toronto.

FOR SALE.

One 100 k.v.a. 3-phase, 25 cycle, 550 volt alternator, 750 r.p.m. with two bearings, bedplate, direct coupled exciter, regulator belt pulley 24 inches dia. by 18 inches face, slide rails and foundation bolts.

One F.M. Rites patent, Ideal Engine, No. 1381, 14 inches by 14 inches, style S.E., 250 rev., built by Goldie & McCulloch.

Also marble panels equipped with oil switch, voltmeter and ammeter.

Apply to Getty & Scott, Limited, Galt, Ontario.

AGENCIES WANTED

The undersigned are open to represent manufacturers in the city of Quebec and district, on a commission basis or for their own account.

We have extensive acquaintance with the general trade here, and can furnish the best of references.

NOREAU & VANDRY
42 ST. PETER ST. QUEBEC.

OFFICERS AND COMMITTEES, 1917-18

Canadian Manufacturers Association

President

S. R. Parsons ..... British American Oil Co., Ltd. .. Toronto.

First Vice-President

W. J. Bulman ..... Bulman Bros., Ltd. ..... Winnipeg.

Second Vice-President

T. P. Howard ..... Phœnix Bridge & Iron Wks., Ltd., Montreal.

Treasurer

J. F. Ellis ..... Barber-Ellis, Ltd. ..... Toronto.

EXECUTIVE COUNCIL

Appointive

W. K. McNaught ... American Watch Case Co., Ltd. .. Toronto.
C. B. Gordon ..... Dominion Textile Co., Ltd. ..... Montreal.
P. W. Ellis ..... P. W. Ellis & Co., Ltd. ..... Toronto.
C. A. Birge..... Steel Co. of Canada, Ltd. ..... Hamilton.
W. K. George..... Standard Silver Co., Ltd. ..... Toronto.
C. C. Ballantyne.... Sherwin-Williams Co. ..... Montreal.
H. Cockshutt ..... Cockshutt Plow Co., Ltd. ..... Brantford.
R. Hobson ..... Steel Co. of Canada, Ltd. ..... Hamilton.
R. S. Gourlay..... Gourlay, Winter & Leeming, Ltd... Toronto.

Elective

Maritime Provinces

Geo. Henderson .... Brandram-Henderson, Ltd. ..... Montreal.
C. A. Lusby ..... Amherst Foundry Co., Ltd. ..... Amherst.
Bruce Stewart ..... Bruce Stewart & Co., Ltd. ..... Charlottetown.
S. E. Elkin ..... Maritime Nail Co., Ltd. ..... St. John, N.B.
Angus McLean .... Bathurst Lumber Co., Ltd. ..... Bathurst Village.

Montreal

G. F. Benson ..... Canada Starch Co., Ltd. ..... Montreal.
J. R. Colby ..... Canadian Carbonate Co., Ltd. ... Montreal.
W. A. Desbarats.... Desbarats Printing Co., Ltd. .... Montreal.
S. W. Ewing..... S. H. Ewing & Sons ..... St. Johns, Que.
D. J. Fraser..... Singer Mfg. Co., Ltd. ..... St. Johns, Que.
Chas. E. Frosst .... Chas. E. Frost & Co. ..... Montreal.
Carl Riordon ..... Riordon Pulp & Paper Co., Ltd. ... Montreal.
S. J. B. Rolland.... Rolland Paper Co., Ltd. ..... Montreal.
G. W. Sadler..... Sadler & Haworth, Ltd. ..... Montreal.
Geo. A. Slater..... George A. Slater, Ltd. ..... Montreal.
F. W. Stewart ..... Cluett, Peabody & Co., Inc. ..... Montreal.
Ferd. van Bruyssel.. Montreal "Star" Pub. Co., Ltd... Montreal.

Quebec City

Jos. Picard ..... Rock City Tobacco Co., Ltd. .... Quebec.
J. H. Gignac..... J. H. Gignac, Ltd. ..... Quebec.

THE BOOTH-COULTER COPPER & BRASS COMPANY, LTD.

SHEETS TUBES COPPER & BRASS AND RODS

SPECIAL SIZES CUT TO ORDER FROM LARGE STOCK—PROMPT SHIPMENT

115-121 SUMACH STREET - - - - TORONTO, CANADA

The Toronto Carpet Mfg. Co.
Limited

Toronto - Canada

WILTON CARPETS, SQUARES *and* RUGS
ONE-PIECE WILTON RUGS
BRUSSELS CARPETS *and* SQUARES
SMYRNA MATS AND RUGS
AXMINSTER CARPETS, SQUARES *and* RUGS
ALL-WOOL *and* UNION CARPETS *and* SQUARES
RAG RUGS *and* NOVELTY MATS

BRYAN PONTIFEX
CHARTERED ACCOUNTANT

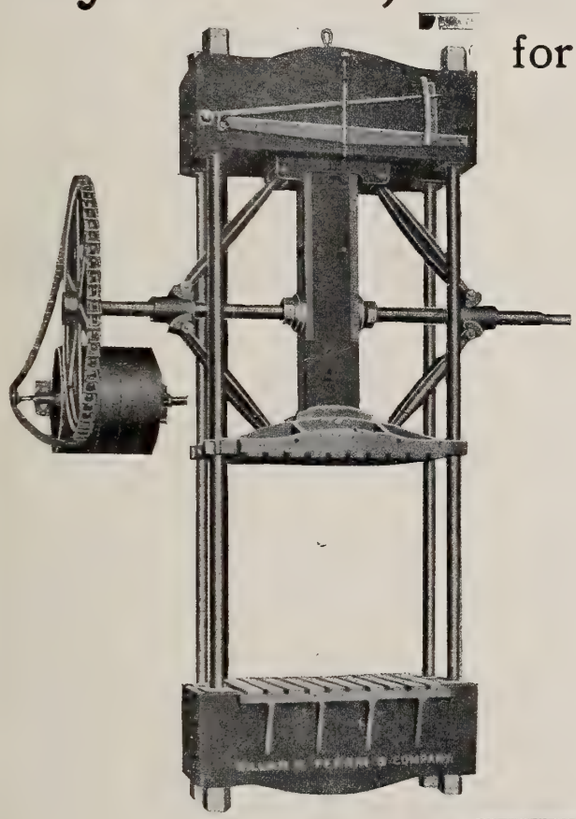
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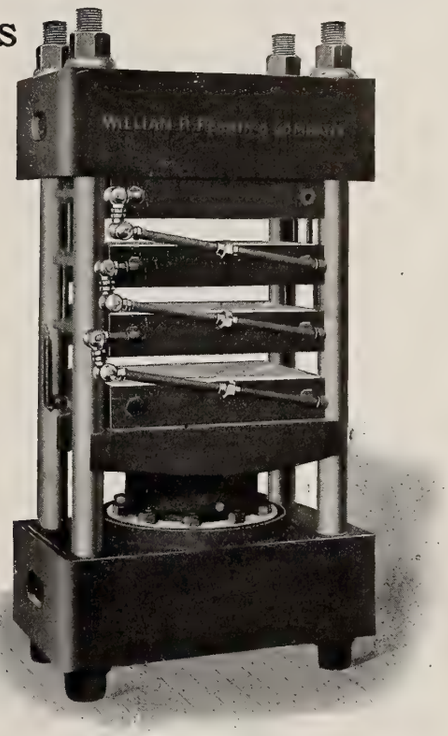
EXCELSIOR LIFE BUILDING
TORONTO STREET
TORONTO **Phone Main 1327**

PRESSES

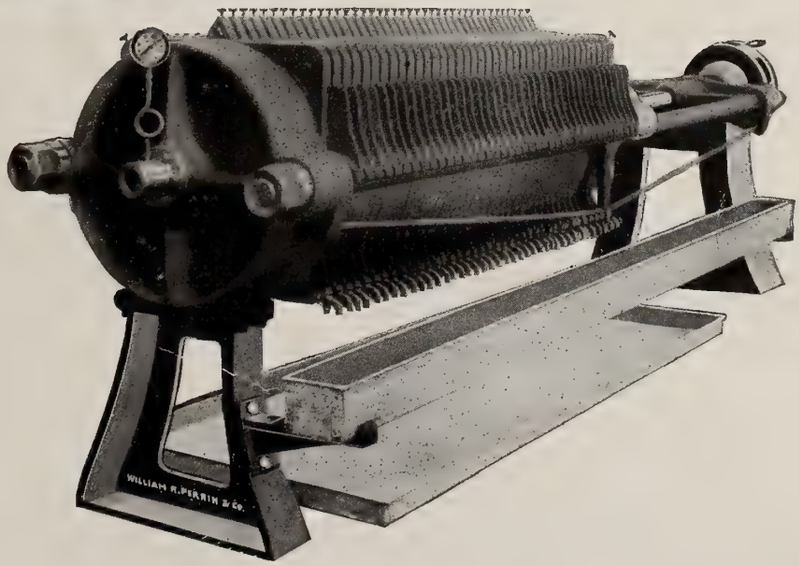
Hydraulic, Power Screw and Filter

for all purposes





MADE IN CANADA



MADE IN CANADA

WILLIAM R. PERRIN, LTD.

TORONTO

WIRE NAILS

IN STEEL HOOP KEG.

WIRE BALE TIES

for baling hay and many other things

FENCE and POULTRY NETTING STAPLES

WIRE

Bright, annealed, coppered stove pipe, liquor finished, square, etc.

The Laidlaw Bale-Tie Company
LIMITED
HAMILTON, ONTARIO

A. T. DIGGINS, Stair Bldg., Toronto, Ont.
H. E. O. BULL, Montreal, Que.
HARRY F. MOULDEN, Winnipeg, Man.
GEO. W. LAIDLAW, Vancouver, B.C.

Standard Wire Nails
AT 25 PER CENT. BELOW LIST

We have 1,000 kegs standard wire nails which have rusted, and which we offer at $4.25 per keg, base price, sizes 1 to 6 inch, and 1 to 3 inch in finishing.

Samples on request

FACTORY WASTE & METAL CO.
223 WELLINGTON, MONTREAL
We purchase seconds or odd stocks—make us offerings



HIGH-CLASS
MADE-IN-CANADA

AIR COMPRESSORS

Send us your inquiries

HAMILTON MOTOR WORKS, LIMITED
HAMILTON CANADA

Quebec Province

C. R. Whitehead	Wabasso Cotton Co., Ltd.	Three Rivers.
F. J. Campbell	Canada Paper Co., Ltd.	Windsor Mills.
J. E. Alain	Victoriaville Furniture Co.	Victoriaville.

Sherbrooke

E. W. Gilman	Canadian Ingersoll Rand Co., Ltd.	Montreal.

Toronto

Geo. Brigden	Brigden's, Ltd.	Toronto.
G. Frank Beer	Consolidated Optical Co., Ltd.	Toronto.
W. C. Coulter	Booth-Coulter Copper & Brass Co., Ltd.	Toronto.
R. D. Fairbairn	R. D. Fairbairn Co., Ltd.	Toronto.
Thos. Findley	Massey-Harris Co., Ltd.	Toronto.
E. J. Freyseng	Freyseng Cork Co., Ltd.	Toronto.
S. Harris	Harris Lithographing Co., Ltd.	Toronto.
R. L. McIntyre	McGregor & McIntyre, Ltd.	Toronto.
J. S. McKinnon	S. F. McKinnon & Co., Ltd.	Toronto.
T. F. Monypenny	Imperial Varnish & Color Co., Ltd.	Toronto.
J. P. Murray	Can. Oil Producing & Refining Co., Ltd.	Toronto.
W. C. Phillips	Frontenac Mould'g & Glass Co., Ltd.	Toronto.
Thos. Roden	Roden Bros., Ltd.	Toronto.
W. B. Tindall	Consumers' Box & Lumber Co., Ltd.	Toronto.
J. Westren	Dunlop Tire & Rubber Goods Co., Ltd.	Toronto.

Hamilton

H. H. Champ	Steel Co. of Canada, Ltd.	Hamilton.
H. J. Waddie	Canadian Drawn Steel Co., Ltd.	Hamilton.
H. H. Biggert	Inter. Harvester Co. of Can., Ltd.	Hamilton.
A. F. Hatch	Canada Steel Goods Co., Ltd.	Hamilton.
Geo. C. Coppley	Coppley, Noyes & Randall, Ltd.	Hamilton.

Ontario

Henry Bertram	John Bertram & Sons Co., Ltd.	Dundas.
Don. M. Campbell	Preston Car & Coach Co., Ltd.	Preston.
Geo. H. Douglas	Thornton & Douglas, Ltd.	Hamilton.
Geo. D. Forbes	R. Forbes Co., Ltd.	Hespeler.
W. M. Gartshore	McClary Mfg. Co.	London.
R. O. McCulloch	Goldie & McCulloch Co., Ltd.	Galt.
R. S. McLaughlin	McLaughlin Motor Car Co., Ltd.	Oshawa.
W. R. Breyfogle	De Laval Co., Ltd.	Peterboro.
T. F. Matthews	Matthews-Blackwell, Ltd.	Peterboro.
John Ransford	Box 29	Clinton.
Alex. Saunders	Goderich Organ Co., Ltd.	Goderich.
T. J. Storey	Canada Carriage Co., Ltd.	Brockville.
J. M. Taylor	Taylor Forbes Co., Ltd.	Guelph.
H. I. Thomas	J. R. Booth	Ottawa.
H. W. Fleury	J. Fleury's Sons	Aurora.
C. H. Waterous	Waterous Engine Works Co., Ltd.	Brantford.
C. C. L. Wilson	Ingersoll Packing Co.	Ingersoll.

Prairie Provinces

W S. Fallis	Sherwin-Williams Co.	Winnipeg.
W. A. Matheson	Lake of the Woods Milling Co.	Winnipeg.
T. R. Deacon	Manitoba Bridge & Iron Works, Ltd.	Winnipeg.
W. R. Ingram	Swift Canadian Co., Ltd.	Winnipeg.
M. F. Christie	G. F. Stephens & Co., Ltd.	Winnipeg.
F. W. Drewry	Edward L. Drewry, Ltd.	Winnipeg.
Jas. Carruthers	Crescent Creamery Co., Ltd.	Winnipeg.
H. R. Eade	Western Steel & Iron Co., Ltd.	Winnipeg.

British Columbia

Alex. Maclaren	North Pacific Lumber Co., Ltd. (Buckingham, Que.)	Barnet.
A. C. Flumerfelt	Hastings Shingle Mfg. Co., Ltd. (Box 721, Victoria, B.C.)	Vancouver.

Tariff Committee

E. J. Davis (Chairman)	Davis Leather Co., Ltd.	Newmarket.
Geo. H. Douglas	Thornton & Douglas, Ltd.	Hamilton.
Geo. W. Watts	Canadian Allis Chalmers, Ltd.	Toronto.
H. H. Champ	Steel Co. of Canada, Ltd.	Hamilton.
C. F. Wheaton	Dodge Mfg. Co., Ltd.	Toronto.
W. C. Phillips	Frontenac Mould'g & Glass Co., Ltd.	Toronto.
C. V. Harding	Toronto Carpet Mfg. Co., Ltd.	Toronto.
L. L. McMurray	Gutta Percha & Rubber, Ltd.	Toronto.
S. J. Williams	Williams, Greene & Rome Co., Ltd.	Kitchener.
Geo. Henderson	Brandram-Henderson, Ltd.	Montreal.
C. H. Carlisle	Goodyear Tire & Rubber Co., Ltd.	Toronto.
W. M. Gartshore	McClary Mfg. Co.	London.
F. J. Sleght	Willys-Overland, Ltd.	West Toronto.

Transportation Committee

J. A. Riordan (Chairman)	Standard Sanitary Mfg. Co., Ltd.	Toronto.
J. E. Ferguson	Canada Furniture Mfrs., Ltd.	Woodstock.
W. R. Dunn	Inter. Harvester Co. of Can., Ltd.	Hamilton.
A. F. Hatch	Canada Steel Goods Co., Ltd.	Hamilton.
C. E. McGhie	Welland Vale Mfg. Co., Ltd.	St. Catharines.
W. R. Ingram	Swift Canadian Co., Ltd.	Winnipeg.
A. W. White	Geo. White & Sons Co., Ltd.	London.
W. R. Breyfogle	De Laval Co., Ltd.	Peterboro.
D A. Campbell	Campbell Flour Mills Co., Ltd.	West Toronto.
C. L. Wisner	Massey-Harris Co., Ltd.	Toronto.
R. P. D. Graham	Goodyear Tire & Rubber Co., Ltd.	Toronto.
E. C. Fox	Wm. Davies Co., Ltd.	Toronto.
S. H. Chapman	Ontario Wind Engine & Pump Co., Ltd.	Toronto.
F. C. Gibson	National Fire Proofing Co. of Can.	Toronto.
A. H. Brittain	Maritime Fish Corporation	Montreal.
Ross McMaster	Steel Co. of Canada, Ltd.	Montreal.
M. F. Christie	G. F. Stephens & Co., Ltd.	Winnipeg.
Henry Bertram	John Bertram & Sons Co., Ltd.	Dundas.
A. D. Huff	Laurentide Co., Ltd.	Montreal.
B. W. Coghlin	B. J. Coghlin & Co.	Montreal.
L. L. Anthes	Anthes Foundry, Ltd.	Toronto.

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Whatever your requirements are in Steel Castings, we have the plant and organization to satisfy them. We are equipped to make Castings weighing up to 100,000 lbs. Our service is dependable and the quality of our products unexcelled.

Your enquiry in reference to Hydraulic, Mill Gear, Car, Locomotive, Marine, etc., Castings will receive immediate and careful attention.

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LIMITED

Toronto OTTAWA Vancouver

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Geo. C. Coppley	Coppley, Noyes & Randall, Ltd.	Hamilton.
S. Harris	Harris Lithographing Co., Ltd.	Toronto.
H. J. Waddie	Canadian Drawn Steel Co., Ltd.	Hamilton.
G. Y. Chown	Wormwith Piano Co., Ltd.	Kingston.
Atwell Fleming	Atwell Fleming Printing Co., Ltd.	Toronto.
C. B. Lowndes	Lowndes Co., Ltd.	Toronto.
J. O. Thorn	Metallic Roofing Co. of Can., Ltd.	Toronto.
Arthur Hewitt	Consumers' Gas Co., Ltd.	Toronto.
F. M. Kimbark	Business Systems, Ltd.	Toronto.
A. W. White	Geo. White & Sons, Co., Ltd.	London.
Æmelius Jarvis	Canadian Locomotive Co., Ltd.	Kingston.
Howard Smith	Howard Smith Paper Mills. Ltd.	Montreal.
M. Hirsch	J. Hirsch & Sons, Ltd.	Montreal.
Wm. Georgeson	Tuxedo Coffee & Spice Mills, Ltd.	Calgary.
T. A. Potter	Quaker Oats Co., Ltd.	Saskatoon.
Geo. D. MacKinnon.	MacKinnon, Holmes Co., Ltd.	Sherbrooke.
H. I. Thomas	J. R. Booth	Ottawa.

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W. H. Shapley (Chairman).	Sterling Action & Keys, Ltd.	Toronto.
C. C. L. Wilson	Ingersoll Packing Co., Ltd.	Ingersoll.
J. W. Millard	Meriden Britannia Co., Ltd.	Hamilton.
Thos. Roden	Roden Bros., Ltd.	Toronto.
A. M. Ivey	John D. Ivey Co., Ltd.	Toronto.
H. W. Fleury	J. Fleury's Sons	Aurora.
— Kerr	Canadian Westinghouse Co., Ltd.	Hamilton.
J. F. M. Stewart	Point Anne Quarries, Ltd.	Toronto.
A. C. Ransom	Ault & Wiborg Co. of Can., Ltd.	Toronto.
J. P. Murray	Can. Oil Produc. & Refin'g Co., Ltd.	Toronto.
G. F. Benson	Canada Starch Co., Ltd.	Montreal.
Chas. E. Frosst	Chas. E. Frosst & Co.	Montreal.
John Bain	Bain Wagon Co., Ltd.	Woodstock.

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W. C. Laidlaw (Chairman).	R. Laidlaw Lumber Co., Ltd.	Toronto.
J. Allan Ross	Wm. Wrigley Jr. Co., Ltd.	Toronto.
K. Bethune	American Can Co., Ltd.	Hamilton.
J. A. Scythes	Scythes & Co., Ltd.	Toronto.
H. J. Hall	Conduits Co., Ltd	Toronto.
L. L. Anthes	Anthes Foundry, Ltd.	Toronto.
W. C. Coulter	Booth-Coulter Copper & Brass Co., Ltd.	Toronto.
E. G. Staunton	Stauntons, Ltd.	Toronto.
Geo. Simpson	Steel Co. of Canada, Ltd.	Hamilton.
S. H. Chapman	Ont. Wind Engine & Pump Co., Ltd.	Toronto.
H. P. Hubbard	E. C. Atkins & Co., Ltd.	Hamilton.
J. A. McMahon	Union Drawn Steel Co., Ltd.	Hamilton.
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YOUR PAINT PROBLEM is very likely different from your neighbor's. Because he does so and so does not signify that you should do the same. We've consulted with many manufacturers regarding the way they were painting their products and the material they were doing it with. In nearly every case there was a peculiar individual twist to the paint necessities which enable us with our years of practical knowledge of the color and paint business to set the manufacturer right, saving him in many cases and most always improving the appearance and often the life of his product.

It's natural. Paint manufacturers of our experience and organization know more about paint and its application than you do, and we would be very glad to consult with you—to advise you on your painting problems in general without cost to you.

Of course we make everything you can use in the form of colors, paints, varnishes, etc., and make them better than most folks—if you're inclined to buy them, well and good, but there will be no obligation written, spoken or inferred.

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R. S. McLaughlin	McLaughlin Motor Car Co., Ltd.	Oshawa.
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J. R. Shaw	Canada Furniture Mfrs., Ltd.	Woodstock.

Representatives to Central Canada Exhibition Association

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Col. J. W. Woods	Smart Woods, Ltd.	Ottawa.

Representatives to Western Fair Association

Arthur W. White	Geo. White & Sons, Ltd.	London.
W. N. Manning	Sherlock Manning Piano & Organ Co.	London.

Representatives to Edmonton Exhibition Association

Geo. C. Robson	W. H. Clarke & Co., Ltd.	Edmonton.

Auditors

Wilton C. Eddis & Sons ..... Toronto.

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Battle Lake.

W. B. Fullerton, of the Fullerton-Fawcett Lumber Company, plans rebuilding of mill destroyed by fire.

Edmonton.

After a lull in operation since the autumn of 1914, the Edmonton Cement Company has been reorganized, the following officers having been elected: President, Alexander Macdonald, Winnipeg; First Vice-President and Managing Director, John A. McDougall, Edmonton; Second Vice-President, J. R. Patterson; Secretary-Treasurer, J. B. Griffiths. It is expected that the company's plant at Marlboro' will be in full blast by August, and that 1,500 barrels daily will be turned out this year, the capacity in 1918 to be 2,250 barrels per day. Between 200 and 250 men will be employed. The company was started under the name of "The Edmonton Portland Cement Company," in 1911.

BRITISH COLUMBIA.

Burnaby.

The Dominion Film Company, Orpheum Building, Vancouver, will erect a $50,000 moving picture studio.

Nanaimo.

The Dominion Shale Brick and Sewer Pipe Company, Limited, operating a big plant near the above place, recently made an assignment for the benefit of creditors. The trouble was brought about by the severe depression in the building trade since the outbreak of the war.

New Westminster.

Van Sycle and Macdonald, of Vancouver, propose to establish a shipbuilding plant here. Estimated cost is $50,000.

The New Westminster Construction and Engineering Company is constructing a shipbuilding plant at Poplar Island. The company has obtained a contract from the Imperial Munitions Board for construction of wooden steamers. Plans have been drawn for a pile bridge to connect the island with the mainland. A wharf is also planned.

A permit has been issued to the Westminster Mill Company for the construction of a frame boiler house, 40 by 60, at an estimated cost of $1,000.

Port Coquitlam.

A. F. Bernstein, of Vancouver, is negotiating with the city council over a proposition to establish a smelter and steel works here. It is understood that the plant would cost $500,000.

Prince Rupert.

The construction of the Emerson Saw and Shingle Mills will occupy all summer, and represent an investment of $300,000.

Queen Charlotte Islands.

An old fish plant at Pacofi, Queen Charlotte Islands, has been turned into a factory for the treatment of kelp. All of the numerous by-products of the seaweed will be extracted. A smaller plant is located at Sidney, Vancouver Island.

Vancouver.

The Cotton Company, Limited, will establish a shipbuilding plant on False Creek and construct ten vessels.

The Vulcan Iron Works will install a shipbuilding plant on Industrial Island.

Victoria.

Damage estimated at $100,000 was done by fire at the Cameron Lumber Company's mills.

The Cameron-Genoa Mills Shipbuilders, Limited, who have been awarded four ship contracts by the Imperial Munitions Board, will extend its present plant.

The Foundation Company of British Columbia, Limited, a subsidiary of the Foundation Company, Limited, Montreal, has just been formed for the purpose of building ships. An order has been obtained through the Imperial Munitions Board, for ten wooden vessels of 3,500 tons each, and a shipyard will be constructed here for this purpose.

MANITOBA.

Winnipeg.

Work has been started on an addition to the Alaska Bedding Company's factory. Estimated cost is $50,000.

The Stewart Sheaf Loader Company will shortly commence the erection of a modern factory in Elmwood.

NEW BRUNSWICK.

Fredericton.

A delegation, headed by T. H. Estabrooks, of St. John, waited upon the Provincial Government for the purpose of discussing the shipbuilding proposition which has been



Who are the Manufacturers of HARRIS HEAVY PRESSURE BABBITT METALS?

A MESSAGE FROM MARS

We admit the disturbance in the planet Mars may not be due to efforts to discover the manufacturers of HARRIS HEAVY PRESSURE, but we can certainly lay claim to the fact that it is a

Universal Favorite

There is no Babbitt Metal made which gives such excellent service.

HARRIS HEAVY PRESSURE BABBITT

DOES ITS DUTY WELL AND DOES IT CONTINUOUSLY



HARRIS HEAVY PRESSURE for all general machinery bearings has a marvellous record in all parts of the world for its

Dependability

That one word is a summary sufficient to satisfy the most discriminating user of babbitt metal.

We manufacture all grades.

Write for complete list.

MADE IN CANADA

The Canada Metal Company, Limited

MONTREAL HAMILTON TORONTO WINNIPEG VANCOUVER

under consideration for some time past. The delegation urged that the Government enact an Act similar to the one which is in force in Nova Scotia, that is, the appointment of a commission to thoroughly discuss the matter of shipbuilding and to investigate as to what measures can be taken regarding this movement in New Brunswick. In Nova Scotia the Government considered a grant of $2,000,000 for the shipbuilding movement, and the delegation ask that the Government follow this example, with the exception that the sum of $1,000,000 would be sufficient for the Province of New Brunswick.

Moncton.

Humphrey's Glass Works, Trenton, N.S., plan to erect a $150,000 glass factory here.

NOVA SCOTIA.

Sydney.

A proposal for the establishment of a steel shipbuilding plant in Nova Scotia by the Dominion Bridge Company and the Beardmore interests, acting together, is now under consideration by the Provincial Shipbuilding Commission created by the Murray Government. G. H. Duggan, of the Dominion Bridge Company, is said to be slated for the position of general manager of the proposed plant. A tentative arrangement is reported made with a leading Canadian steel company for the erection of mills to roll the necessary plates. The Bridge-Beardmore interests are reported as favoring Halifax for the site of the plant, but an effort will be made to induce location here.

Work is being commenced on the $3,000,000 coke oven plant for the Dominion Iron & Steel Company. The plant, which will consist of 120 ovens, will take from eighteen months to two years to complete, but it is expected that the first oven will be ready for use about March, 1918. The ovens are on the same principle as those now in use, but are of a more modern and improved type, and their construction will be supervised by experts of the By-Products Coke Company of Canada, Limited.

Windsor.

Colonial Fertilizer Company, Water Street, plan extension to plant.

ONTARIO.

Alvinston.

Can't Sag Gate Company contemplates factory addition.

Bracebridge.

The Muskoka Foundry Company contemplate making an extension to their plant.

Brantford.

The Brantford Computing Scale Company have purchased a site to the rear of their factory. It is understood that extensive additions will be made, including a foundry.

The Kitchen Overall Company are considering the erection of a new factory on the property recently acquired by them.

Belleville.

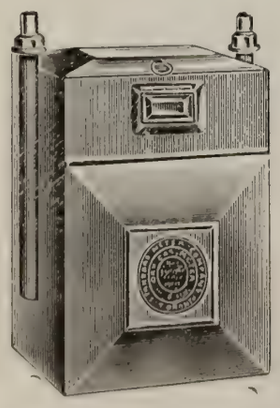
The Graham Company will rebuild evaporator, etc.

The Standard Meter Co. Limited

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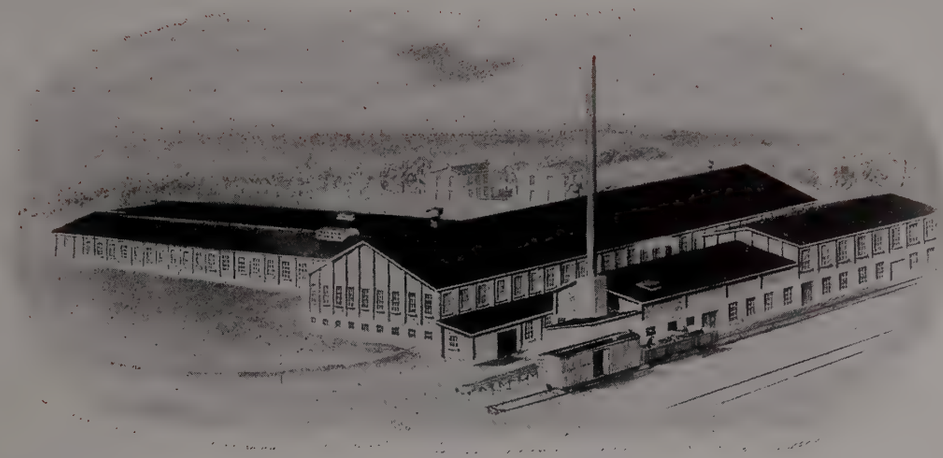


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Montrose Division, Thorold, Ont.

Making 60,000 lbs. daily. Books, Bond, Writings, Envelope and Offset Papers

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TORONTO

THRIFT IN FOREST FIRES

Last year 265 Canadian men, women and children perished because of forest fires.

About six million dollars' worth of property disappeared from the same cause.

The easiest and best-paying Thrift Campaign for 1917 is to keep the next five months clear of such needless sacrifices.

The neglected camp fire, the tossed-away match and cigarette, the burning of settlers' "slash" have heaped up our national account for wasted life and property.

This is the Programme

If you are a settler—Guard well your clearing fires.

If a hunter, fisherman, camper, prospector—Put that Camp Fire out before you leave it. Put it DEAD OUT. Try a couple of extra pails of water or shovels of earth.

Never build a fire except in rocks or gravel or other safe spot. Keep your fire small. It cooks better and is safer.

Please do not throw away lighted tobacco or matches. It is the trick of an amateur. No veteran, no good citizen, fools with fire.

All the big Conflagrations have started with a wisp of flame. Your lighted match, your cigarette, your camp fire are exactly what is needed to ignite the fuse.

PROVINCIAL PAPER MILLS CO., LIMITED

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Acid Resisting
Stove
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STOVE AND BOILER PUTTY

And Other
Specialties

G. F. Sterne & Sons

BRANTFORD, CANADA

Chatham.

Plans have been prepared for a new foundry for the International Harvester Company to be erected on Grand Ave. Approximate cost is $15,000.

Cobourg.

Work has started in transforming the old customs building into a factory for the Bird-Archer Company. They will manufacture boiler supplies.

Elmira.

Tenders will be called at once for erection of a dry kiln and moulding shop for the Elmira Transmission Company.

Fort City.

Ratepayers approved of a by-law to grant tax exemptions to Chalmers Motor Car Company, in return for which the company will erect a factory.

Galt.

Galt has another new industrial company, the Galt Building Products, Limited, which will manufacture, by a secret process, sand brick tile, artificial marble and other building materials. The company has secured a site and expects to commence filling orders shortly. The plant is to be built north of the city. The new industry has a provincial charter and is capitalized at $40,000.

Goderich.

The North American Chemical Company propose building an addition to their factory to cost about $25,000.

T H-E

Now This Convention

would be a direct, quickly-felt benefit to your business. We refer to a little meeting between you, your factory superintendent and a Hydro Engineer, whom we would gladly send free of all charge or obligation, to tell you just what saving we can effect in your power costs.

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65% of the depreciation of the average car is preventable by the use of a good lubricant.

Polarine prevents *preventable* wear and tear. It lubricates efficiently under all conditions and deposits a minimum of carbon.

THE IMPERIAL OIL COMPANY
Limited

BRANCHES IN ALL CITIES

T. 212

Gravenhurst.

The Canadian Potash Corporation have about closed negotiations with the Gravenhurst Stone Crushing Company, to lease their large plant and immediately commence the manufacture of potash. It is stated that a considerable percentage of potash exists in the feldspar veins in Muskoka granite, and a large deposit is available right at the mill.

Haileybury.

An effort is to be made to induce the Riordon Pulp and Paper Company to erect the large plant, which has been under consideration for some time, at this place.

Hamilton.

The Steel Company of Canada, Limited, is negotiating for the purchase of a site from the city for the erection of a large steel plate mill, 650 by 150 feet.

Canada Screw Company, 334 Wellington Street West, contemplate $100,000 factory addition.

Contract has been awarded for a $60,000 addition to the factory of the Canadian Cotton Company.

Proctor and Gamble plan a $25,000 brick addition to their factory.

The National Paper Goods Co., 144 Queen Street North, have let the contract for a $10,000 addition to their factory. Tenders have also been called by the Canadian Shovel and Tool Company for a $35,000 addition to its factory on Imperial Street, and the Canadian Drawn Steel Company plans the erection of a $5,000 office building.

Kincardine.

The Circle-Bar Knitting Company is erecting an addition to its building.

CANADIAN NATIONAL EXHIBITION

1867 Canada's Jubilee Year 1917

Space is now being allotted in the various buildings devoted to manufacturers. Early enquiries indicate an exceptionally heavy demand for accommodation in all departments.

FOR EXHIBITORS WHO HAVE NOT SECURED THEIR SPACE **IMMEDIATE ACTION IS ADVISED**

Dates are—August 25th to September 10th.

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"Made in Canada"

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FOR EVERY SERVICE

WE manufacture a complete line of Link-Belt at our Toronto factory, including all sizes of Ewart Link-Belt, "400" Class, "H" Class, Pintle, Refuse and Transfer, and solicit enquiries for these and all types of chain for elevating, conveying and power transmission purposes. Write for catalogs and full particulars.

All of our products measure up to the high Link-Belt standard of quality. Identify our Link-Belt by this trade mark on every link.





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Catalogs on request.

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Toronto, Ontario

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CANADIAN OIL COMPANIES LIMITED
Quality First
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WHITE LEAD
READY MIXED PAINT
COLORS IN OIL
VARNISHES
BLACK JAPANS
STEEL BRIDGE PAINTS
ROOFING PAINTS
CUP GREASE
LINSEED OIL SOAP

Lanark.

The Clyde Woollen Mills were completely destroyed by fire. Loss, $150,000.

Leamington.

A proposition has been made by a Detroit capitalist to locate a million-dollar beet sugar refinery here, providing certain conditions can be met.

London.

London and Petrolea Barrel Company, Simcoe Street, plan reinforced concrete storage sheds, costing $3,500, and dry kiln costing $5,000.

Beattie Bros., York Stret, contemplate erection of $50,000 factory and boiler house.

Longford.

Contract has been awarded by the Standard Chemical Iron & Lumber Company for the erection of a large barrel storage shed by the gunite method.

Markham.

The Markham Woollen Mills were destroyed by fire. The loss is estimated at between $100,000 and $125,000.

Mitchell.

Tenders have been called for the erection of a $35,000 brick addition to the knitting factory for A. Burritt & Company, Logan Road.

ESTABLISHED 1850

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that jarring, grinding noise in your machine shop caused by the metal gears?

Wouldn't you like to stop that noise? You can do it by using

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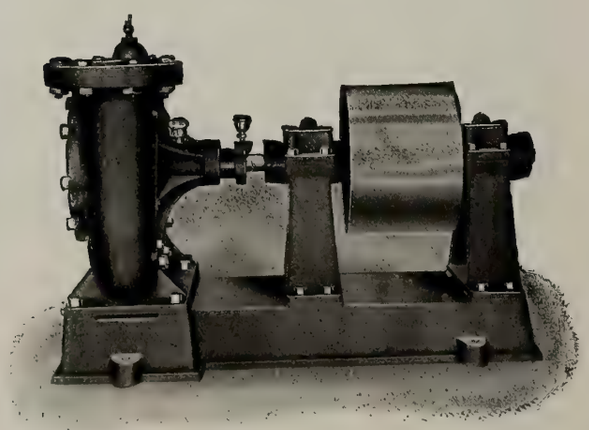
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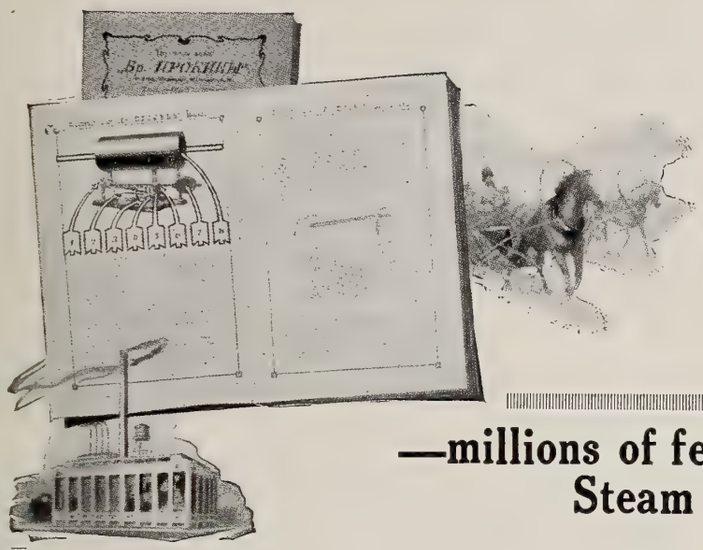
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With the industrial awakening of Russia came the introduction of the Morehead Back to Boiler System—it has been adopted as standard equipment in hundreds of leading Russian plants.

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Home Office: NEW GLASGOW, N.S.

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Ojibway.

It has been announced that the United States Steel Corporation have appropriated to date the sum of $9,000,000 for the building of the Canadian plant here, the information to this effect being given out by Judge Gary. The total investment which the steel company will make at Ojibway will certainly be $20,000,000, and it is believed that this large amount will be greatly exceeded within a decade.

Owen Sound.

The Northern Bolt and Wire Company has under construction a new building, 50 x 100 feet. The building is fireproof and of concrete and corrugated iron.

Work on excavation for the new Keenan factory has been started. The new building will be 63 by 135 feet and three stories high.

Pembroke.

The Colonial Lumber Company's mills have been destroyed by fire, resulting in a loss of about $140,000.

Peterborough.

The tentative plans for the new plant which the Quaker Oats Company propose to erect at Peterborough, Ontario, to replace the one destroyed by fire, provide for an eight-storey factory to be erected at an initial cost of $1,500,000. It is to be a composite building, including flour, rolled oats, puffed rice, and other mills, with elevators, etc.

Port Colborne.

According to President Monell, of the International Nickel Company, the refinery being erected here will cost $5,000,000, and will be ready for operation by the beginning of 1918.

St. Catharines.

Ratepayers passed three industrial by-laws, one to encourage by partial exemption the establishment of a wood-cleaning plant for the Bonner-Heddle Company, and the building of new plants for the St. Catharines Brass Works, and St. Catharines Silk Mills.

The St. Catharines Brass Company are going to enlarge their plant at a cost of $15,000 and will be exempt from taxes for ten years. This firm will manufacture plumbers' supplies and brass fittings.

The St. Catharines Silk Mills contemplates building a factory at the corner of Page and Queen streets. The cost is estimated at $60,000.

Sarnia.

The Mueller Manufacturing Company will erect a rest-room for their employees, at an estimated cost of between $12,000 and $15,000. They are also having plans made for a warehouse and contemplate immediate construction.

Springfield.

The Springfield Milk Company are having plans prepared for a $50,000 factory addition.

Toronto.

The Canadian General Electric Company will build a large addition to their office building at King and Simcoe streets, Toronto.

The Booth-Coulter Copper and Brass Co., Limited, 115 Sumach St., are erecting a $7,000 brick factory addition.

The Dominion Envelope Company will make a $50,000 addition to their warehouse.

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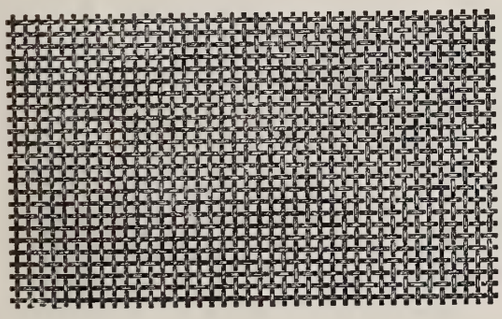
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All grades of Wire Cloth, Double Crimped.
Screening Accuracy Guaranteed.
Made of Steel, Copper or Brass.
Galvanized and Tinned Cloth.

Perforated Metals

Wire Rope

MANUFACTURED BY

THE B. GREENING WIRE CO., Limited
HAMILTON, ONT. : : MONTREAL, QUE.

Contract has been let for an $80,000 brick chocolate factory for Willards Chocolates, Limited, 260 Spadina Avenue.

The Swift Canadian Company, St. Clair Avenue and Keele Street, are erecting a reinforced concrete packing plant at an estimated cost of $125,000.

The Hoyt Metal Company has received a permit to build an addition to their factory on Eastern Avenue, near the north-east corner of Lewis Street, at a cost of $5,000.

A permit has been issued to Penfound Varnish Company for an addition to their factory, Cariboo Avenue, at a cost of $1,400.

Waterbury Chemical Co., Limited, 58 Spadina Ave., plans to enlarge their factory at an estimated cost of $5,000.

Welland.

The Welland Shipbuilding Company have commenced dredging for new slips and are erecting workshops prior to shipbuilding construction.

Windsor.

Canadian Ford Motor Company purchased additional land near here and may erect addition to their present plant.

QUEBEC.

Cookshire.

The Wax & Glassine Paper Company expect to start operations early in July. The main building of the company has just been completed. The motive power used will be

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ELECTRIC TRAVELING CRANES
HAND POWER TRAVELING CRANES
ELECTRIC HOISTS AIR HOISTS FOUNDRY EQUIPMENT
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electrical, and with various Reeves transmission gear for varying the speed of the different machines. A fifty horse-power locomotive boiler for melting the wax and heating the buildings is also being installed. The company have also taken over the *Chronicle* printing plant of Cookshire, now being operated on job work. Later they intend putting in a glassine plant.

Lauzon.

Work on the new drydock is progressing with such rapidity that it is expected to be ready to accommodate vessels next fall. About six hundred men are now working there and excavation work will be completed this season, with most of the concrete work, leaving only the work of minor details to be done next season. Four hundred yards of concrete are being mixed and put in position each day. The total quantity of concrete in the big dry dock when it is completed, will be about 140,000 yards. The drydock will be able to hold two average-sized ocean liners, as it is 1,150 feet in length. It has two sets of gates, one at the end and one in the middle, which divide the dock into two parts, which can be used separately. The depth of the dock is about 49 feet.

Montreal.

Contracts have been awarded in connection with the erection of a $100,000 factory extension for the Imperial Tobacco Co., Limited, 900 St. Antoine Street.



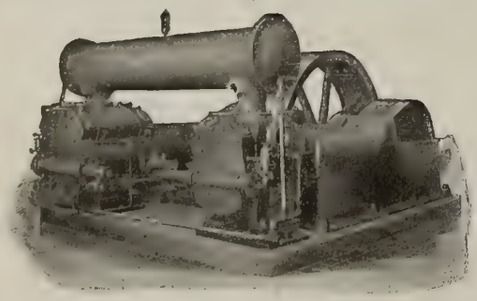
Canadian Pacific Railway Bridge, Trenton, Ont.
25 Spans, Weight 2,500,000 Lbs.

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EFFICIENT, RUGGED

Moderate in cost. Built to successfully stand severe and continuous service. Full range of sizes and types.

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Locomotives on trunk line railroads have the advantage of the best facilities for inspection and repairs.

Industrial locomotives face different conditions. They must work day after day in the hardest service, and often in localities where repairs cannot be made without great inconvenience. That is why we build our industrial locomotives from interchangeable stock parts. With this system every part must fit every other locomotive of the same size and design, and long delays waiting for duplicate parts is avoided. Interchangeable parts kept on hand at our Works for prompt shipment.

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COTTON & WOOL WASTE

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Washed Cotton Wipers

All wipers have been hand selected, hard and starchy parts and buttons, etc., removed, sleeves and other closed parts opened and subjected to a thorough washing, rendering absolutely sanitary.

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SELECT WHITE MIXED COLORED
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Manufacturing a full line of Twines from flax, hemp, and jute fibres.

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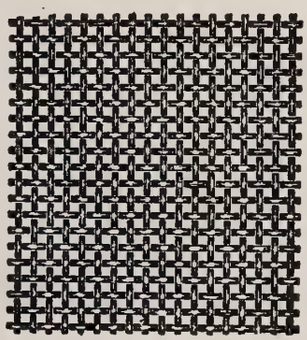
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Manufacturers of **Double Crimped Wire Cloth and Wire Screening** for all purposes of Iron, Brass, Copper, Bronze, Galvanized and Tinned Wire, etc.

There is no kind of Wire Fabric required in the production of any machine or manufactured article that we cannot furnish.

We also manufacture:—

Bank and Office Grilles and Ornamental Iron Work in all finishes.

Wire Guards for Factory Windows, Moulders' Riddles, Laboratory Testing Sieves, Steel Factory Stools and Metal Lockers.

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It represents increasing effort to give you something good to drink

MALTUM

the beverage for all—suits all tastes and is good for all.

MALTUM

has become most popular in Western Canada, not only as a beverage to be drunk casually at drug stores, fountains or cafes, but in that place we consider most important—the home.

MALTUM

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A product of fine cereals which are selected for their value as well as for the deliciousness resulting from their scientific value, given fragrance and tang by the addition of choicest hops.

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TWEED, ONT., CANADA

Quebec.

A group of Westerners, headed by James Playfair, of the Quebec Shipbuilding Company, propose to establish a steel shipbuilding plant on the St. Charles River. It is also reported that one of the largest iron and steel companies in Canada have secured an option on a site between Champlain Market and the bridge, on which to erect a steel shipbuilding plant.

AFTER-THE-WAR PROBLEMS.*

By T. R. DEACON,
Manitoba Bridge & Iron Works, Winnipeg.

Some years ago, just a few months before the war, I had an opportunity of having a somewhat lengthy conversation with Sir George Paish, the most eminent financier I suppose in the Empire, who was visiting Canada at that time, as no doubt many of you will remember, looking into the question of our ability to meet our financial obligations. He was representing a number of English bankers and money lenders. In the course of conversation he told me that at that time our obligations for money we had borrowed, Dominion, provincial, municipal and railway borrowings, and industrial enterprise borrowings, altogether amounted to about three thousand millions of dollars. I was told by the general managers of two of the leading Canadian banks at that time, that our requirements for interest were about twelve million dollars per month, or roughly one hundred and fifty million dollars a year. At the end of this war, if we continue another year, and I think it is altogether probable we will, we will have another burden of perhaps two billions added to that, making altogether approximately five billions of dollars which the people of this country will have to find interest for. Lumping it all, say at five per cent., that is about two hundred and fifty millions of dollars which will have to be produced of new wealth out of the sources which have been mentioned,—the soil, forests, mines and fisheries of the country.

I don't think there is anything indefinite about that at all. That is clear and will be a burden resting on this country. In addition to that the other point is that we will have returned from three hundred to four hundred thousand men whose whole habits of life will be changed. Those men are the flower of Canadian manhood and when they come back here if we, who remain at home, have not fulfilled our duties and prepared things so that they will be able to find honorable and profitable employment, those men will not stay in the country, a great many of them. I do not believe that any great number of those men, particularly those who have not been born on farms or been engaged in farming before they went away, can be put on farms, even with a little money. They won't stay there. We don't want to have happen in Canada what happened once before, large numbers of our young men leaving the country. We want to keep those men here.

Those then are three things that appear to me to be absolutely definite and important, namely, the actual development of our natural resources, the conversion of them into negotiable wealth, and the retaining of the young men of British blood when they come back from the war.

I don't know whether there is any other organization in Canada better adapted to form a lead in that than the Canadian Manufacturers Association. I don't know whether there is anything to be gained by interminable conferences. We all know that these things are so obvious to every person in the country that endless talk will not accomplish what we want. There ought to be a concerted action of all the influential bodies in Canada to press upon the Government the extreme importance of adopting decisive, energetic measures to really develop our natural resources and to make this provision for these men when they come back. I think whatever influence the Canadian manufacturers can bring to bear ought to be brought to bear so that the thing will not be allowed to drift until the end of the war. In addition to these men coming back you all know that large numbers of men will be released from the employment in which they are now—some 600 factories making war materials; these men will be released and they will have to change to another line of work and, if we are not careful,—I may be entirely wrong and my philosophy be founded on false premises, I don't know, but at any rate it is my deduction,—we may be faced with a debacle such as we have not any conception of at the present time. The situation is not one that need be faced pessimistically at all. If the situation can be handled energetically, intelligently and scientifically, it can be taken care of. We have the country, the resources, the climate, and the people with the characteristics necessary to overcome even so great difficulties as these, but if there is merely endless streams of conferences and talks and it is allowed to drift we won't accomplish it, we will land up in a bad situation.

Now if the C. M. A. can do anything to get action on that, it seems to me to be our duty as patriotic citizens of the country to do everything we can do in that way. I may say that here in Winnipeg there is a branch already formed in a small way of the National Technical Association which has its headquarters at Montreal, and this branch of the C. M. A. has two representatives on that and we are doing what we can to get information and acting as energetically as we can to help along the solution of that question.

*Speech on motion to adopt report of the Executive Committee.

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GREASE CUPS
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DOWEL PINS

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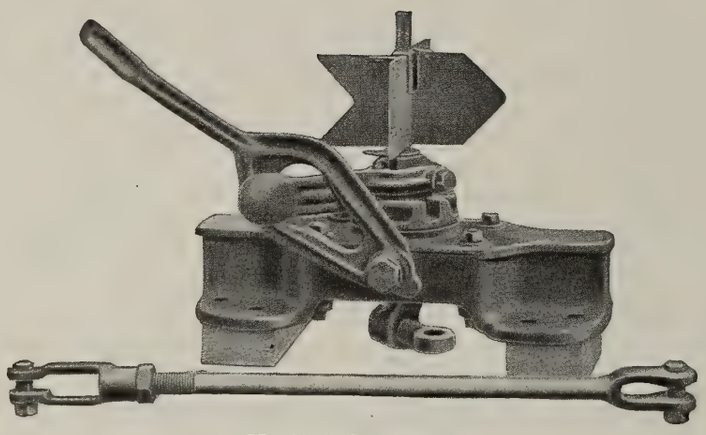


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RAMAPO Automatic Safety Switch Stands



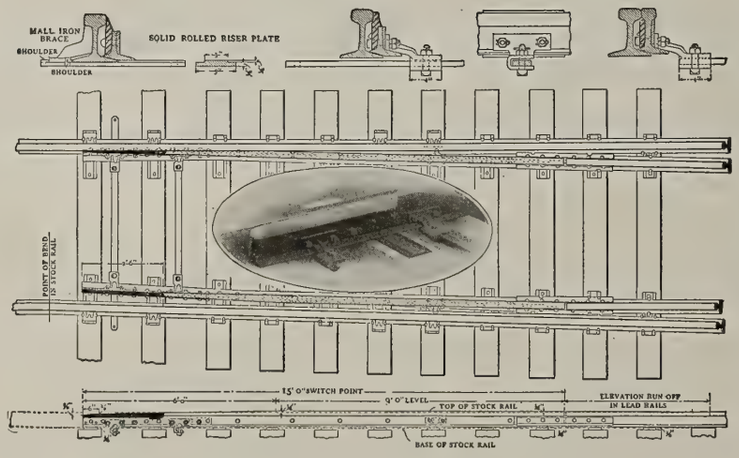
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Railroads should use Ramapo Manganese Pointed Switch Style No. 12

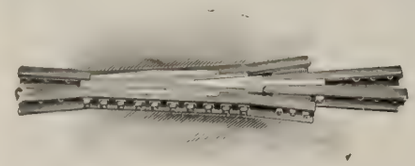
RAMAPO

Manganese Frog, Style No. 1

This Reinforced Manganese Frog will in Hard Service outwear all rail frog Four to Six Times.



RAMAPO MANGANESE POINTED SWITCH.- Style No. 12



This is the RAMAPO MANGANESE POINTED SWITCH which will outwear SIX TO TEN ordinary all rail switch points. Try it somewhere in the hardest place you know of.

CANADIAN RAMAPO IRON WORKS LIMITED

NIAGARA FALLS, CANADA

New Incorporations

Information about various new and old enterprises, the incorporation of which has been announced in recent issues of the Canadian and Provincial Gazettes.

The impetus recently given to shipbuilding is amply evidenced in the incorporation of the Halifax Shipbuilding Co., Limited, Halifax, N.S., with a capital of $3,000,000.

We have to record still another molybdenum company of slightly smaller scope than the one mentioned above. This is the Pontiac Molybdenite Co., Limited, Toronto, authorized capital $500,000.

Rein Drive Tractors, which are now being assembled in Canada, will now be produced by a new $5,000,000 company which will operate under the name of Rein Drive Tractors, Limited, Toronto.

The Pressed Metals Co. of Canada, Limited, are extending their operations very considerably and for this purpose have taken out a charter under the above name, with a capital of $2,000,000.

A big new lumber company has been formed to operate in Northern Ontario. Three million dollars capital is authorized to be employed by the Abitibi Timber Co., Limited, with head office in Toronto.

The activity in the shoe business has as a partial result the incorporation of the Beckwith Box Toe, Limited, Sherbrooke, Que., who will employ $100,000 capital in manufacturing box toes and other shoe parts.

It will be interesting to see whether the Republic Stamping & Enameling Company, of Canton, Ohio, undertake to manufacture their lines in London where a branch of theirs has been licensed to operate with a capital of $40,000.

One of the largest recent incorporations is that of the Fabri-Cord Tire Company of Canada, Limited, Toronto. This company is authorized to use $1,500,000 in the manufacture of rubber and gutta percha goods. No definite facts are available as yet.

The old established company operating in Woodstock under the name of the Archibald Cereal Mills Company, has been taken over and put on a wider financial scale by a new company, which will operate the mill under the name of the Peerless Cereal Mills, Limited.

A small company has been created in Hamilton to manufacture electric stoves and other appliances. J. F. Radigan, a well known manufacturer, and some others, are the interested parties. The company will operate under the name of Electrical Appliances, Limited.

A $1,000,000 company has been formed by Toronto and Montreal engineers and capitalists to make additional inroads into the raw material from which molybdenum is procured. The name of the new company is the Dominion Molybdenites, Limited, of Toronto.

A capital of $1,000,000 is authorized to be used by a newly-incorporated company called The Canada Iron Products Co., Limited, of Montreal. Several Montreal capitalists are interested in this company, whose powers comprise the manufacturing and dealing in iron, steel and other metals from the ore to the finished product.

The property in Chatham, formerly owned and operated by the Chatham Bridge Co., Limited, has been taken over by Canadian Des Moines Steel Co., Limited. The new company has a capital of $100,000, largely supplied, we understand, by the parent company in Pittsburg. New machinery is now being installed in the plant which when finished will undertake the work of erecting bridges, water tanks, etc.

Penmans

Underwear, Hosiery and Sweaters
Laundry, Pulp and Papermakers' Felts, Blankets
Lumbermen's Socks, etc.

Factories at

PARIS, THOROLD, PORT DOVER, ALMONTE AND BRANTFORD, ONTARIO
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Penmans LIMITED

PARIS : : : CANADA

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WATERHOUSE HIGH GRADE WARRANTED BRAND UNSHRINKABLE REG'D UNDERWEAR

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UNDERWEAR

GUARANTEED DR. NEFF'S SANITARY UNDERWEAR SIZE 32 UNSHRINKABLE

THE COMPLETE RANGE
BALBRIGGAN, MERINO AND RIBBED, in Two-piece and Combinations
UNDERWEAR YOU CAN DEPEND UPON.

Our Guarantee with Every Garment to the Consumer

Get behind these two lines which we stand behind and build up a profitable underwear business.

THOS. WATERHOUSE & CO. - Ingersoll, Ont.

WOODS & HOWARD, Coristine Bldg., Montreal, Sole Selling Agents for Quebec and Maritime Provinces

We sell only to the wholesale trade.

The Standard Woollen Mills Co. of Toronto, Ltd.

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MONTREAL COTTONS

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WHITE VICTORIA LAWNS

WHITE NAINSOOKS

and

DYED COTTONS

OF EVERY DESCRIPTION

CAPE BRETON'S STRATEGIC VALUE.

How the National Future of Canada is Bound Up with the Retention of this Famous Island.

When the French monarchs of the old regime selected Louisburg as the site of an impregnable fortress, proudly named the "Dunkirk of America," they had a proper conception of the strategic importance of the ISLE ROYALE, that outpost of Canada since known as Cape Breton Island.

Who holds the Island of Cape Breton commands the Cabot Straits and the Gulf of St. Lawrence, and if that same power holds also the Island of Newfoundland, the Gulf of St. Lawrence can be made a closed sea.

While the main ideas of naval strategy are the same in all times, yet to-day we think in terms of modern inventions. The advantages given to Cape Breton Island by its geographical position are at this date enhanced by the presence of large bodies of coal developed to a producing stage, by the existence of a large iron and steel works and chemical plants, and by the existence in connection with these industries of commodious harbors, equipped with facilities for loading and discharging cargoes, and by rail connection with the mainland.

It may be laid down as an axiom that no modern nation can retain economic independence unless it possesses within its frontiers a supply of bituminous coal. Bituminous coal is the motive power of modern civilization. It has been truly said—and by a German military leader—that victory in the present war will go to the nation that can mine and carbonize the largest quantity of bituminous coal. No form of deep mining can be prosecuted without coal, and the absence of coal will effectually limit the mining of all metals and minerals.

Coal, moreover, is the source of the base of the most destructive modern explosives. Briefly, without coal the national armament would be limited to the weapons of the mediaeval knight.

As this war and its preliminaries have abundantly demonstrated, economic dependence spells sooner or later political subservience.

The importance of Cape Breton Island is chiefly this: With the exception of a strictly limited deposit of bituminous coal on the mainland of Nova Scotia, the Island of Cape Breton and the submarine territory adjacent, contains the only supply of bituminous coal in Canada east of the region of Weyburn and Estevan.

The national future of Canada, its maintenance of national integrity and political independence, is bound up with retention of possession of the coalfields of Cape Breton Island. This may seem a sweeping statement, originating in the mind of one who attaches undue importance to coal, but a little consideration of the present position of France, Italy, Switzerland, Norway, Sweden, Spain, Greece, and—to come nearer home—of Central Canada, will show that the statement is made advisedly. France and Italy would be impotent and defeated if it were not for the coalfields of Britain and the British Navy.

In these times coal spells power. It is a necessity of nationhood.

Is it therefore too much to say that if Canada wishes to fulfil the glorious promise of her future, she must guard as a precious jewel that remote Island which saw the dawning of British power and British ideals on this Continent, and stands not only as a sentinel over the broad and ancient commercial highway of the St. Lawrence, but is Canada's chief treasure house and depository of coal, a substance greater in potentialities than all the silver of Cobalt, or all the gold of Porcupine and Yukon?—*F. W. Gray in the Canadian Mining Journal.*

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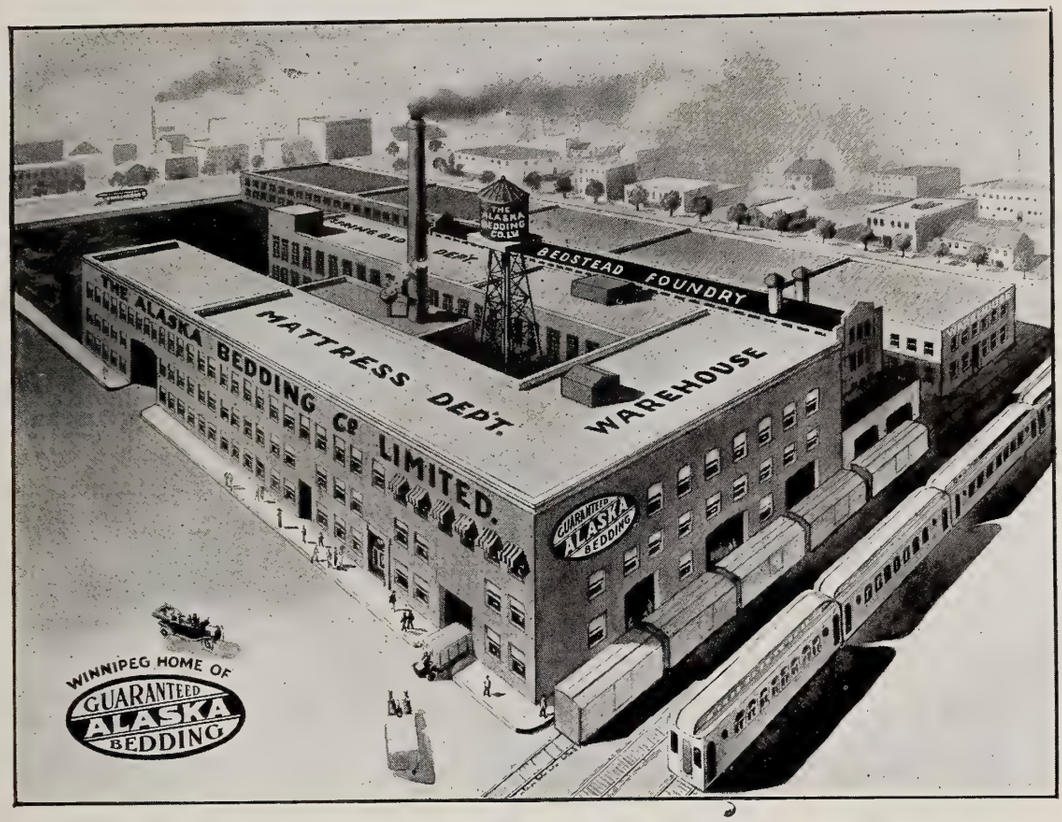
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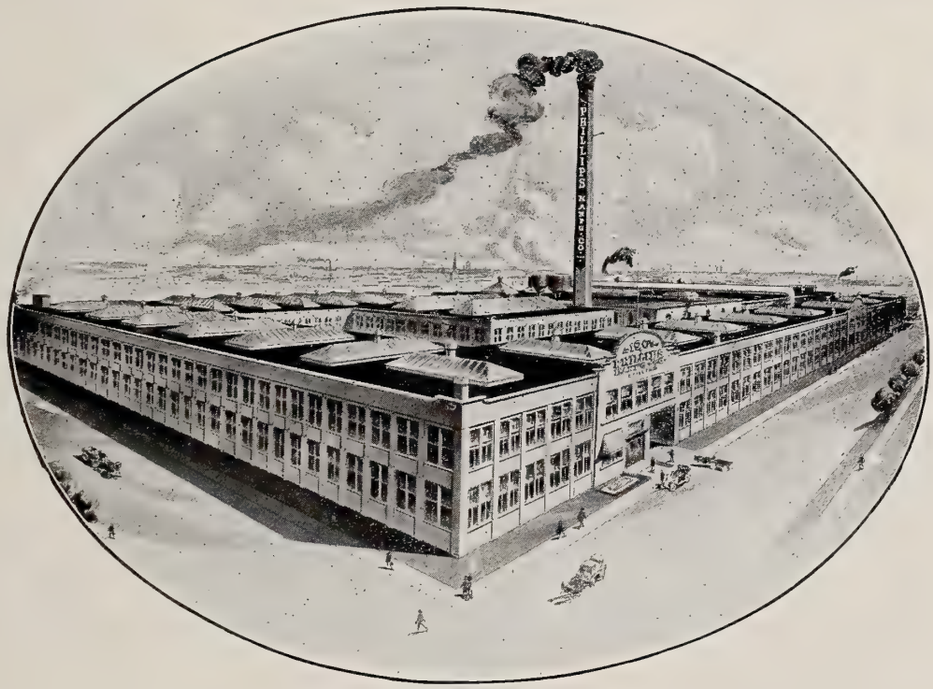
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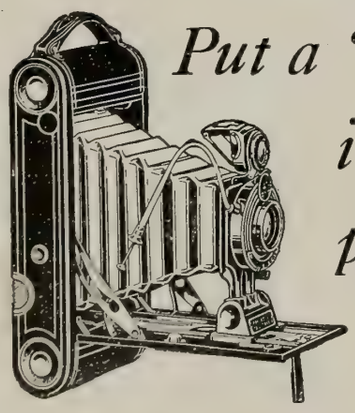
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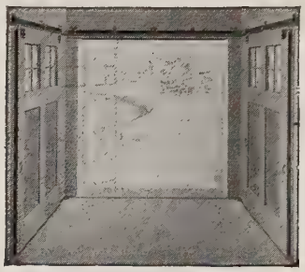
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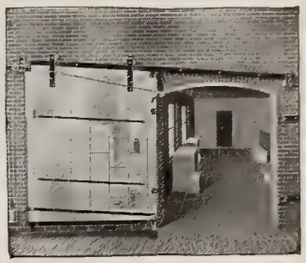
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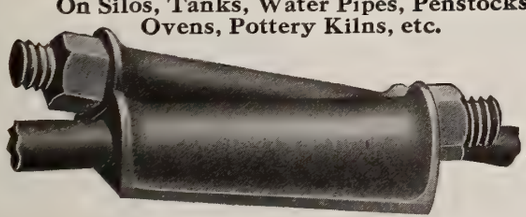
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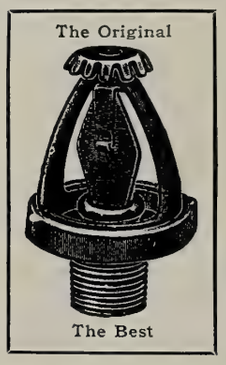
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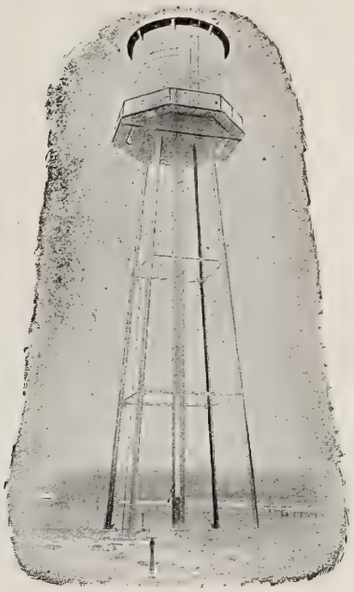
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NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.

D. M. MEDCALF, Chief Inspector of Steam Boilers.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

W. C. McGHIE, Chairman of Board.

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOGRAPHIC REGISTER SYSTEMS
Business Systems, Ltd., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton. Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton. Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton. Ont.

*For Display Advertisement see Index, Pages 539-540

BRASS GOODS
*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*The Structural Steel Co., Limited, Montreal, Que.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal. Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton. Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford. Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal. Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton. Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited. Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton. Ont.
*Booth-Coulter Copper & Brass Co., Limited. Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton. Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound. Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford. Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton. Ont.
*Hull Iron and Steel Foundry, Ltd., Hull. P.Q.
*Joliette Steel Co., Ltd., Montreal.
*Wm. Kennedy & Sons, Ltd., Owen Sound. Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean. Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation. Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford. Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford. Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited. Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark. Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke. Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited. Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited. Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.

*For Display Advertisement see Index, Pages 539-540

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.
CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,
COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
CORKS
S. H. Ewing & Sons, Montreal, Que.
CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.
CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.
CORSETS
Dominion Corset Co., Quebec, Que.
COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.
COTTONADES
Hamilton Cotton Co., Hamilton, Ont.
COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.
COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
CRANES
*Northern Crane Works, Walkerville, Ont.
CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.
CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.
CREAM SEPARATORS
The Renfrew Machinery Co., Ltd., Renfrew, Ont.
CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.
CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.
CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.
CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
CUPS, presentation
Standard Silver Co., Toronto.
CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.
CURLED HAIR
*Delany and Pettit, Ltd., Toronto.
CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.
CUTLERY
Standard Silver Co., Toronto.
CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.
DENIMS
Hamilton Cotton Co., Hamilton, Ont.
DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
DESIGNERS
Ontario Engraving Co., Hamilton, Ont.
DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.
DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.
DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
DISINFECTING APPARATUS
Spramotor Co., London, Ont.
DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.
DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.
DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.
DRESSING, belt.
Sadler & Haworth, Montreal, Que.
DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.
DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.
DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.
DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.
DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.
DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.
DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.
DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.
DYNAMITE
Canadian Explosives, Limited, Montreal, Que.
DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.
EIDERDOWN
Galt Knitting Co., Ltd., Galt.
ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.
ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.
ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.
ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.
ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.
ELECTROTYPING
Central Press Agency, Toronto.
ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.
ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.
ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.
ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.
EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.
ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.
ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
*Massey-Harris Co., Ltd., Toronto.
ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.
ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.
ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto
Stone, Limited, Toronto.
ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.
ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.
ENGRAVING
*J L. Jones Engraving Company, Toronto.
ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited, Ottawa, Ont.
ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.
EXCELSIOR
*Delany & Pettit, Ltd., Toronto.
EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.
EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.
FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.
FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
FANS
*Sheldons, Limited, Galt, Ont.
FASTENERS, belt
*Sadler & Haworth, Montreal, Que.
FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited Montreal.
FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.
FENCING AND GATES, woven wire
Banwell-Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.
FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.
FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.
FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.
FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.
FILING CABINETS
*Office Specialty Co., Newmarket, Ont.
FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.
FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.
FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.
FIRE BRICK, JOINTLESS
*Beveridge Paper Co., Ltd., Montreal.
FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.
FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

*For Display Advertisement see Index, Pages 539-540

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
*Hamilton Gear & Machine, Toronto.
*Winnipeg Gear & Engineering Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.

INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

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JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont

JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.

LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS
*Maples, Limited, Toronto.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*The Pedlar People Limited, Oshawa.

METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*The Pedlar People Limited, Oshawa.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement see Index, Pages 539-540

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.

PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.

PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES AND CATSUPS
T. A, Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement see Index, Pages 539-540

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLL PRINTING
Business Systems, Ltd., Toronto.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited. Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*The Pedlar People Limited, Oshawa.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHEETS, galvanized
*Dominion Sheet Metal Co., Ltd., Hamilton.
*The Pedlar People Limited, Oshawa.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*Metallic Roofing Co., Limited, Toronto.
*The Pedlar People Limited, Oshawa.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMELTER LINING
*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

* For Display Advertisement see Index, Pages 539-540

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.
SPRAYERS
Spramotor Co., London, Ont.
SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.
SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.
STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.
STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.
STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.
STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STAMP MILLS
*Jenckes Machine Co., Sherbrooke.
STATIONERY, office
Harris Lithographing Co., Toronto.
STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.
STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.
STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.
STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.
STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.
*Joliette Steel Co., Ltd., Montreal.
STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.
STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.
STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL SHELVING
*Dennis Wire & Iron Works Co., London.
STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.
STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STEREOTYPING
Central Press Agency, Toronto
STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto
STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont
STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.
STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.
STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.
STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.
STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.
STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.
SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.
SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls. Ont.
SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal. Que.
SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls. Ont.
TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.
TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.
TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.
TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.
TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton.
TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.
TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.
TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.
TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.
TILING, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.
TIRES, bicycle, carriage and motorcycle
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.
TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.
TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.
TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.
TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.
TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.
TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.
TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.
TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.
TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.
TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
TUBING, Fibre
*Beveridge Paper Co., Limited. Montreal.
TUBING, gold and silver
Canadian Seamless Wire Co., Toronto
TUMBLERS, foundry
*Northern Crane Works, Limited. Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton. Ont.
TURPENTINE
*Brown Corporation, La Tuque, Que.
TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TWEEDS
Rosamond Woollen Co., Almonte, Ont.
TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.
TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.
TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont
UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.
UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.
UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.
VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.
VALVES, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal, Que.
VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt
VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.
VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.
VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*The Pedlar People Limited, Oshawa.
VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.
WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.
WASHERS
*The Steel Company of Canada, Limited, Hamilton.
WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.
WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.
WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.
WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto.
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

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WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.
WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que
Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.
WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.
WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia. Ont.
WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont
WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
WINDOW SHADES
Daly & Morin, Montreal, Que.
WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.
WIRE CLOTH
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.
WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.
WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.
WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.
WOOD PRINTERS
Barchard & Co., Ltd., Toronto.
WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.
WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
WOOL
*H. V. Andrews, Toronto.
WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.
WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.
WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.
WROUGHT IRON PIPE
*The Steel Compony of Canada, Ltd., Hamilton.
WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.
YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.
ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement see Index, Pages 539-540

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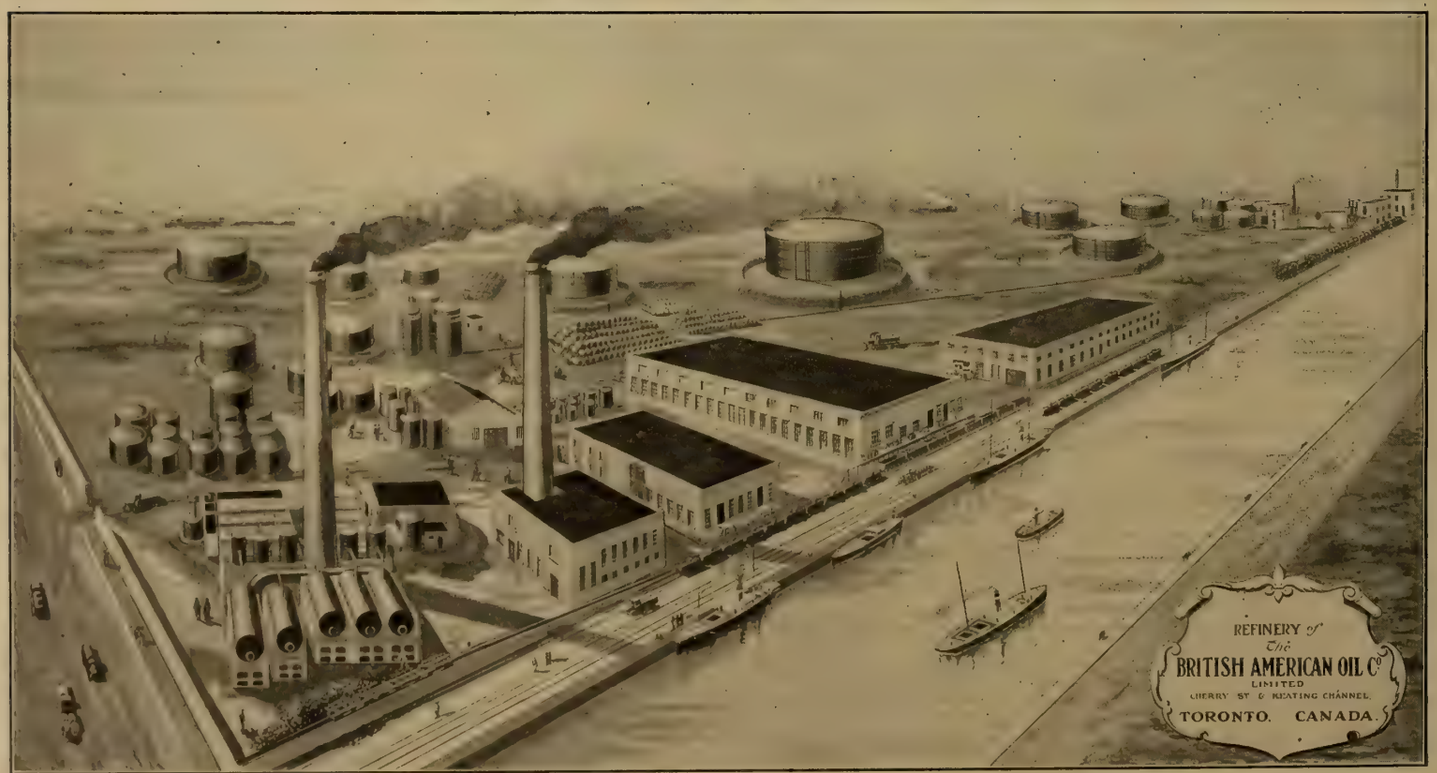
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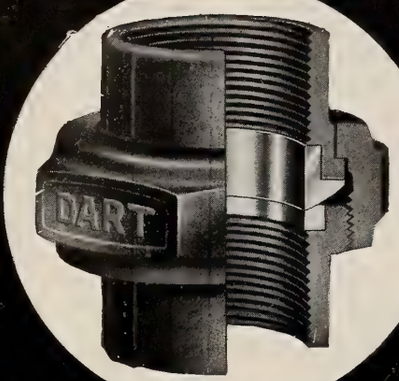


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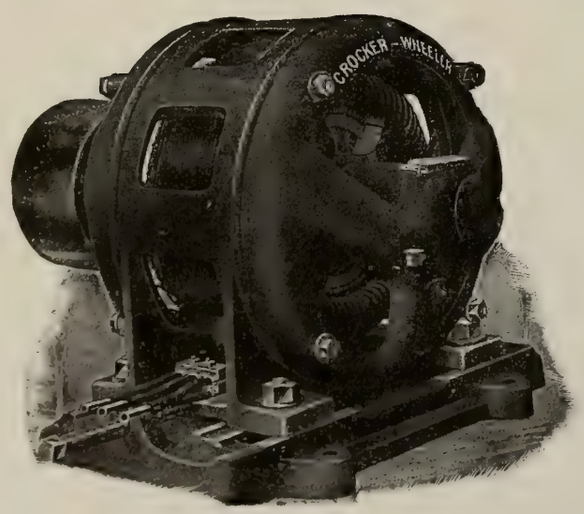
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The Sander
That Takes Your Work as it Comes

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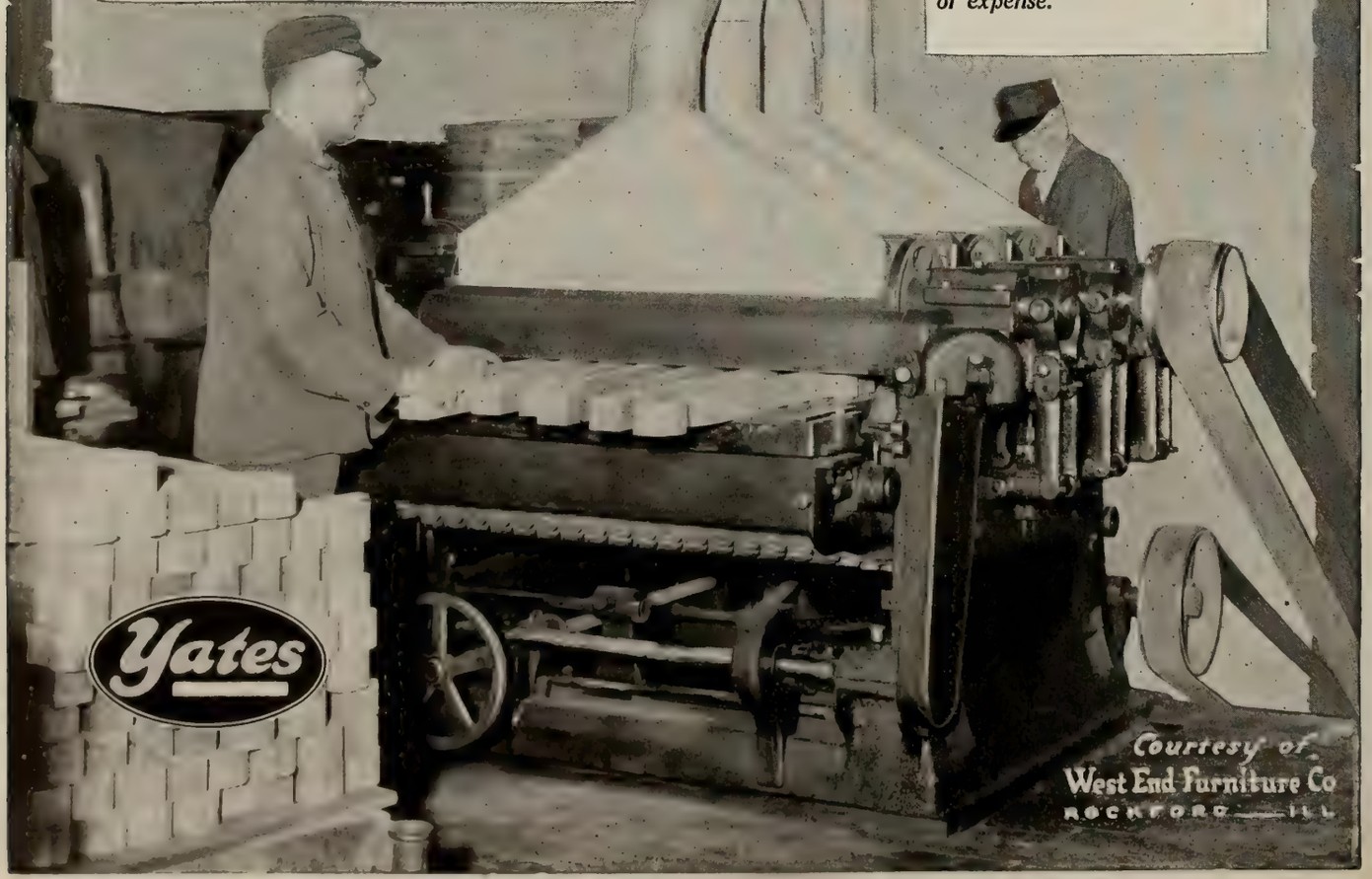
Yates Endless Bed Sander

It sands successfully a great variety of stock. Pieces as short as 3½ inches are carried under its drums by the rubber grips on its traveling bed and perfectly sanded. Picture frames, drawer ends, furniture rails, small panels, draughting triangles, toys, serve only to indicate the variety of work that can be done on the Yates Number 431 Endless Bed Sander.

The more difficult pieces can be handled in forms. All small work with flat sides is most economically finished on this machine. The hopper feed of the Yates Endless Bed Sander is built in, and more than doubles a hand feed output.

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P. B. Yates Machine Co. Ltd.
HAMILTON, ONT. CANADA
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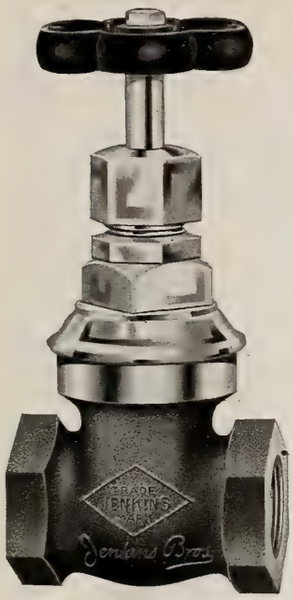


FIG. 300
OUTSIDE VIEW

TRADE JENKINS MARK
Jenkins Bros.

WE CAN MAKE
IMMEDIATE
DELIVERY
OF

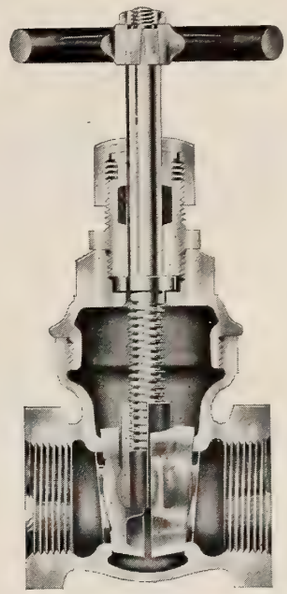


FIG. 300
SECTIONAL VIEW

Jenkins Bros.' Type "K" Brass Gate Valves

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Type "K" Gate Valves

THEY WILL GIVE YOU THE SERVICE YOU NEED

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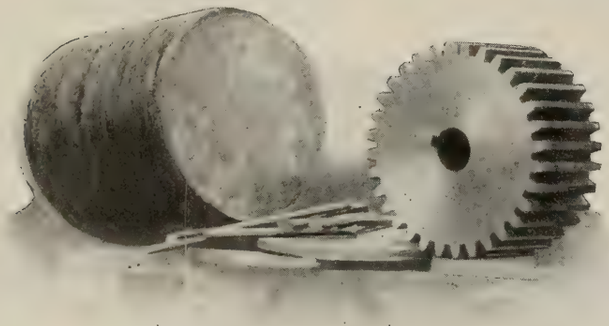
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Use Quiet Rawhide Pinions for Motor Drives



The rough material and a large finished R. H. pinion.

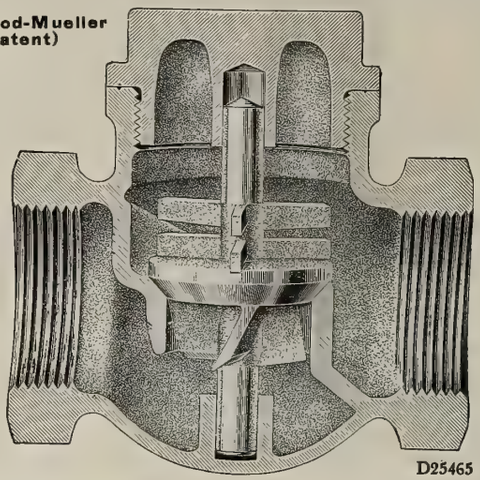
Our large stock of rawhide pinion material is at your service for quick delivery.

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MUELLER
NON-FOULING
Turbine Check Valves

(McLeod-Mueller Patent)



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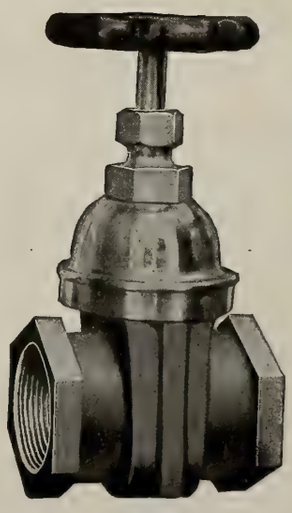
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Steam, water, oil, or similar liquids of common density are, by constant agitation from action of turbine wings, prevented from fouling the seat and rendering the check ineffective.

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They are not made of one quality this year and another next. Always reliable and worth the price you pay.

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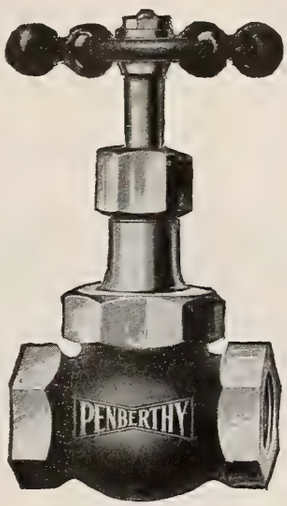
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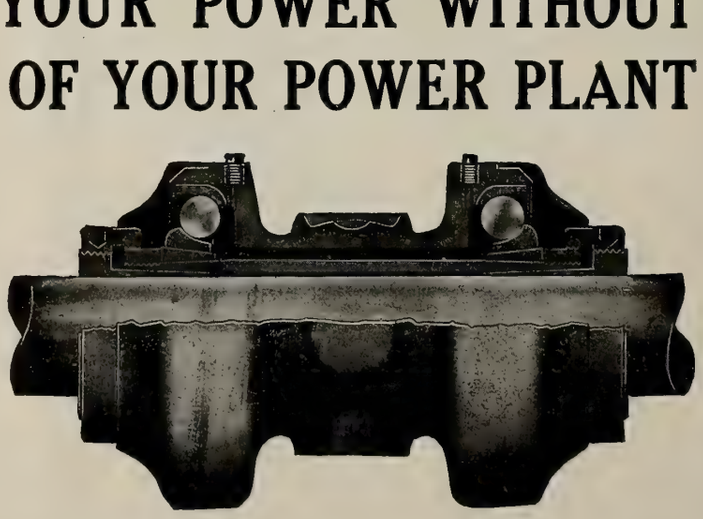
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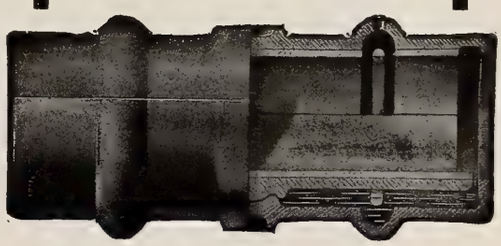
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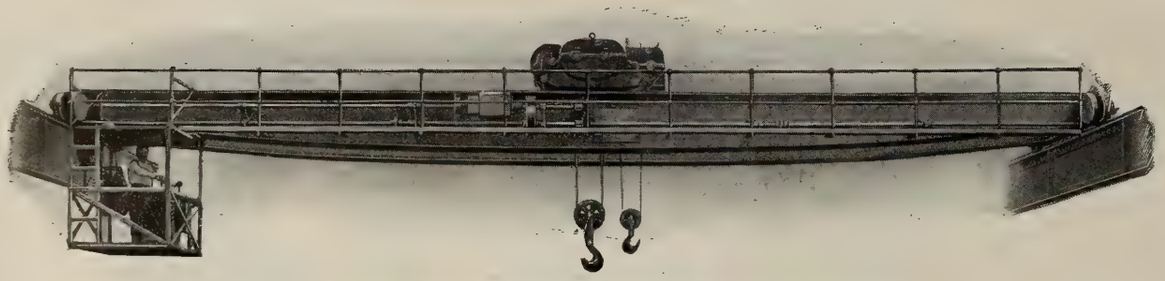
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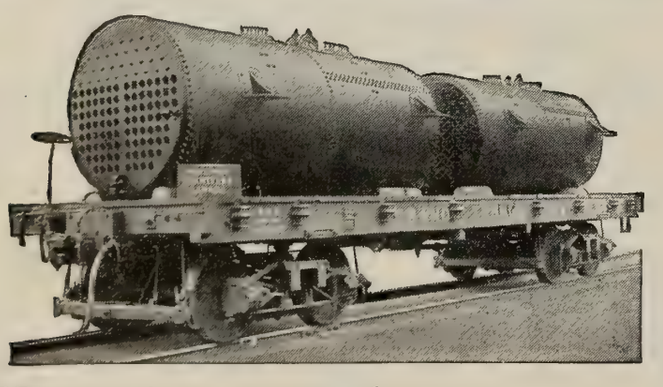
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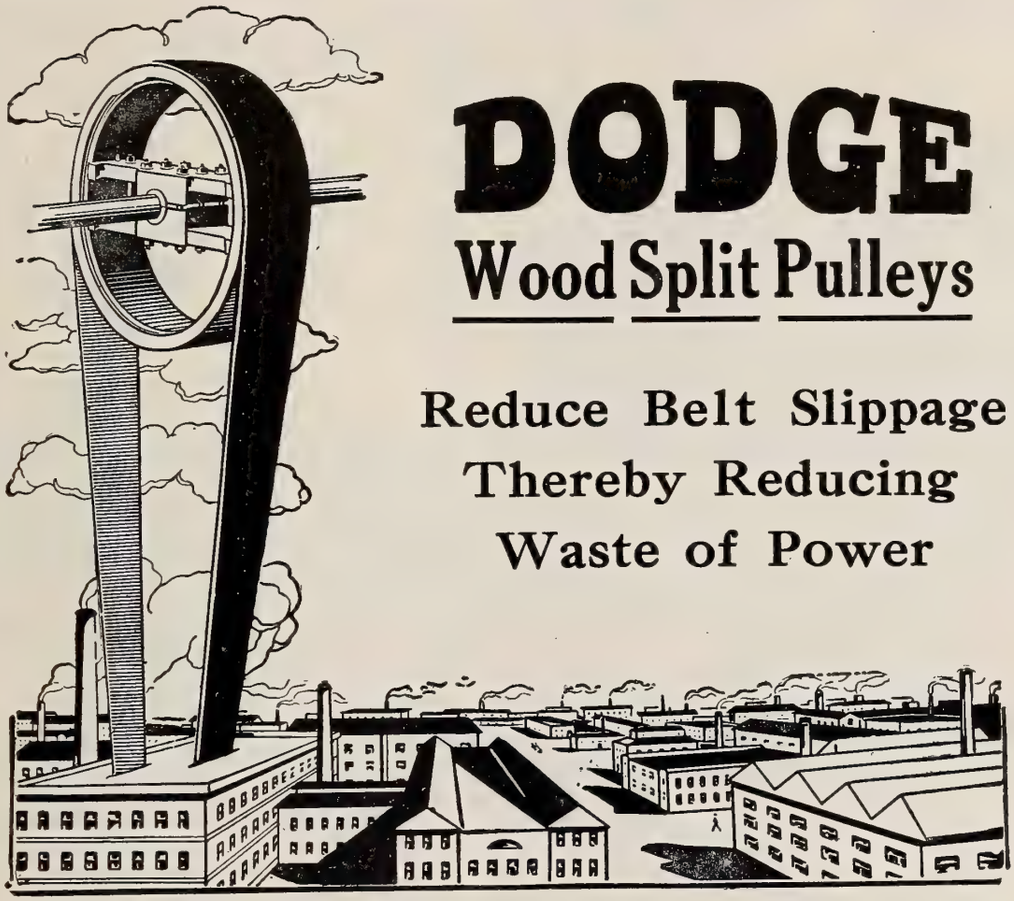
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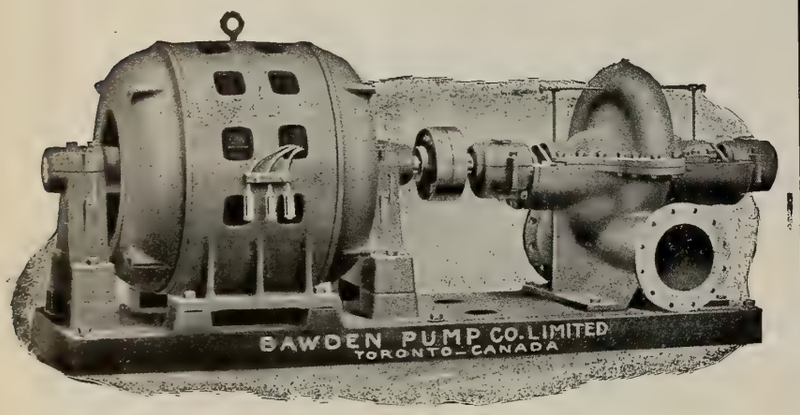
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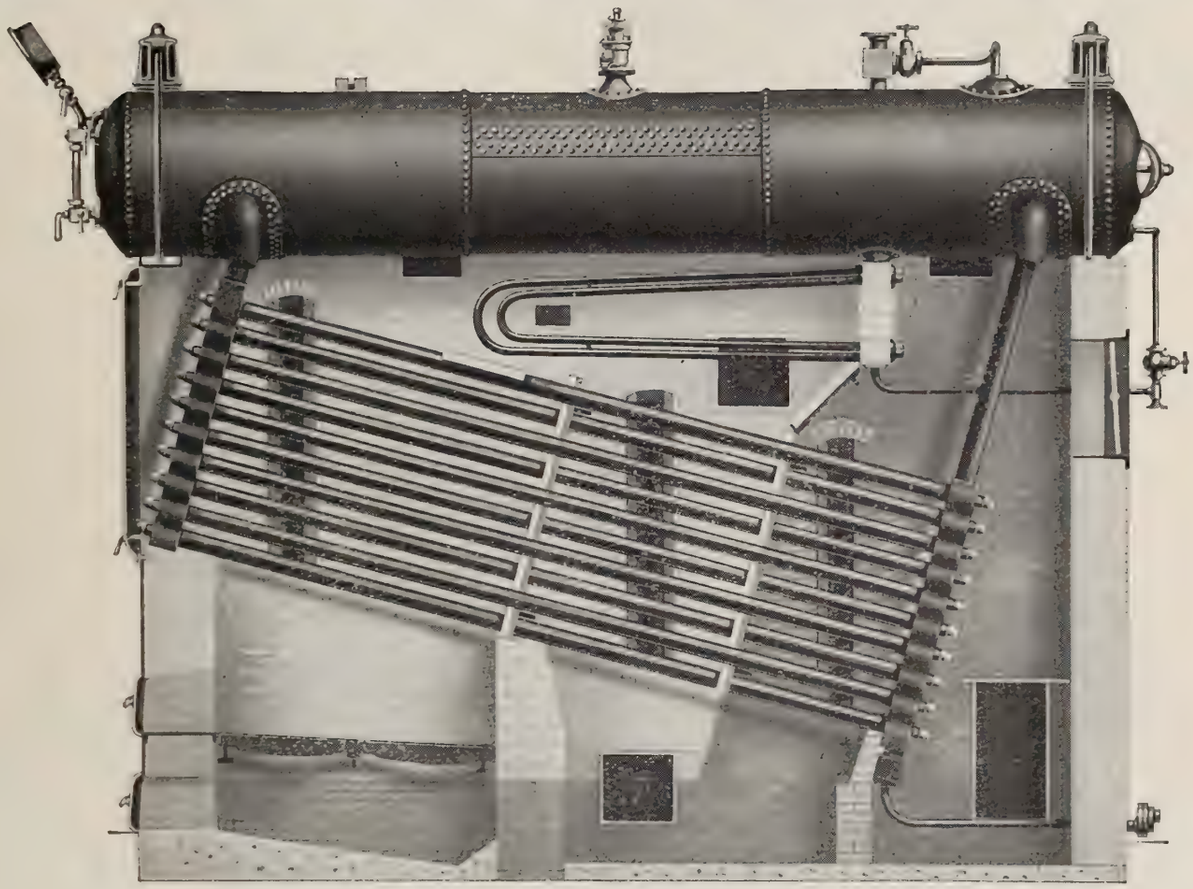
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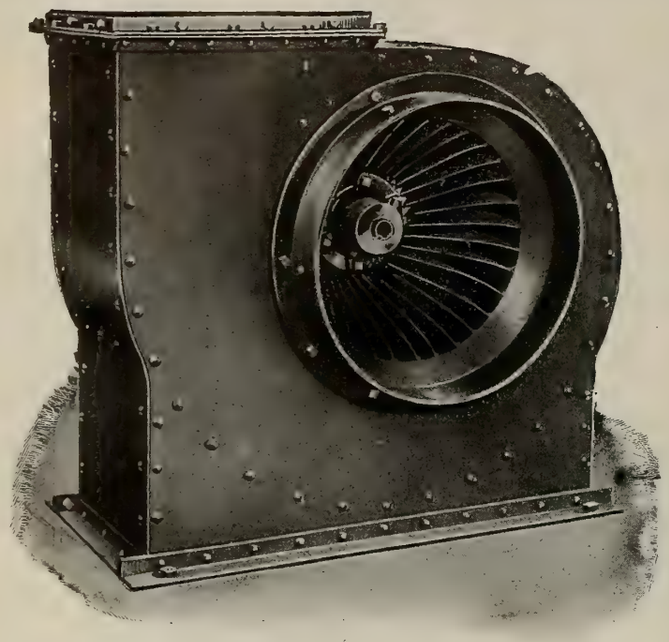
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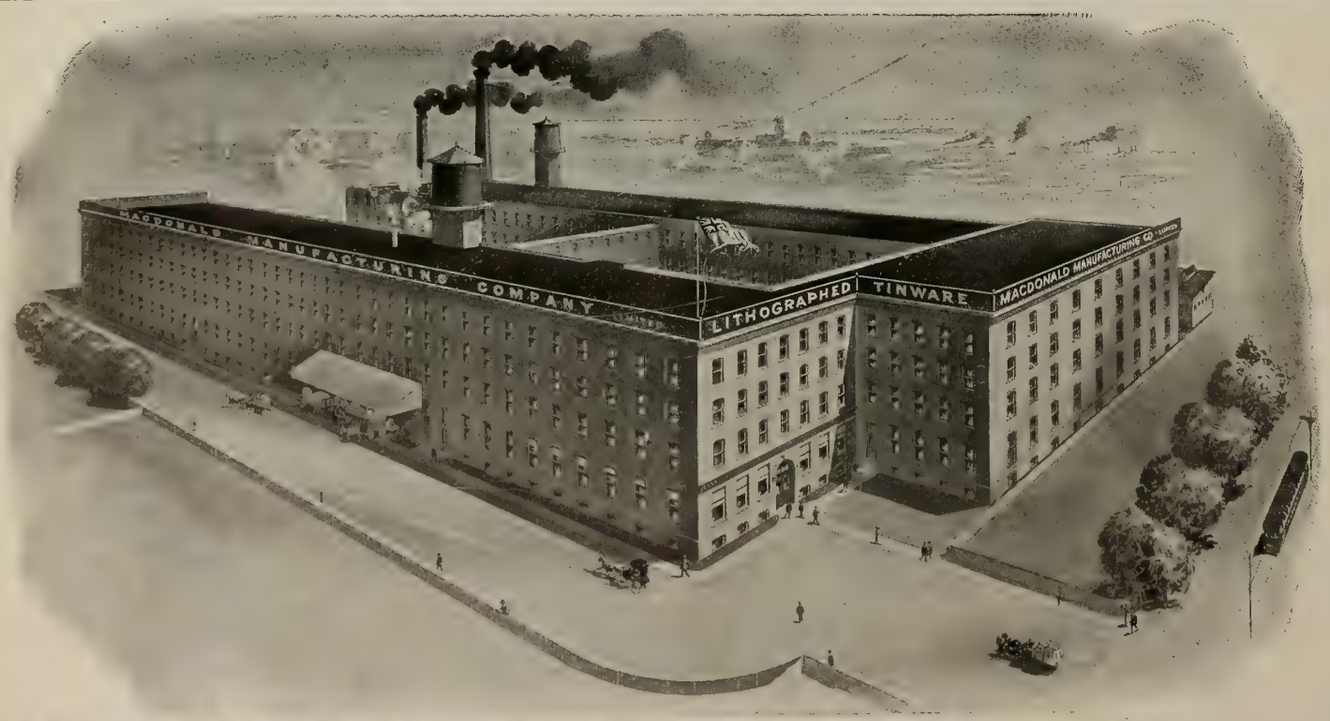
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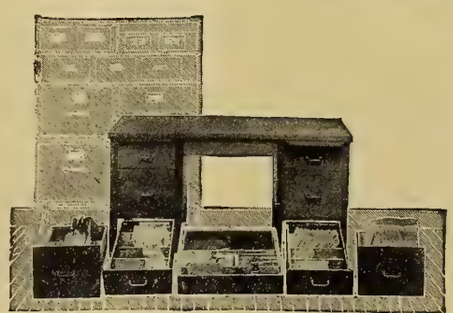


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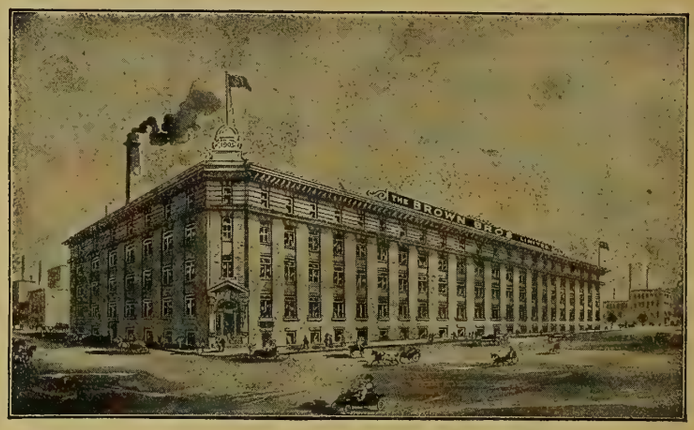
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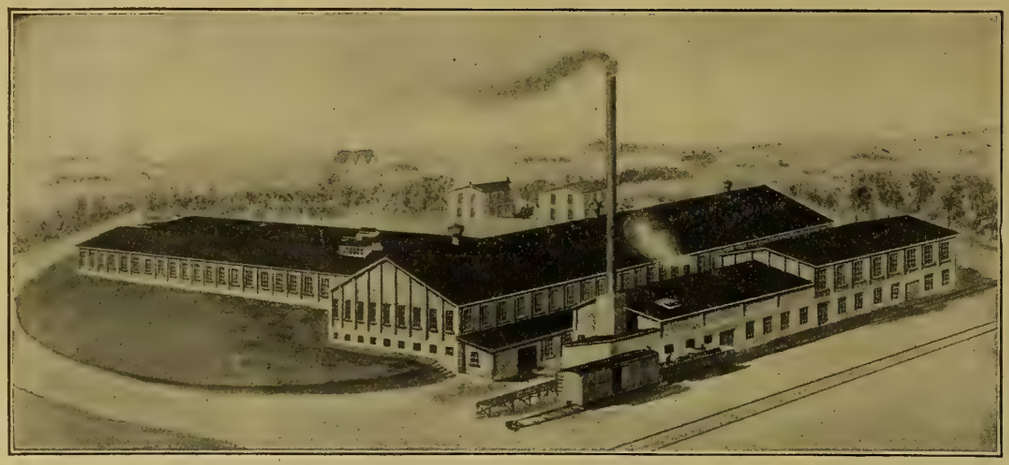
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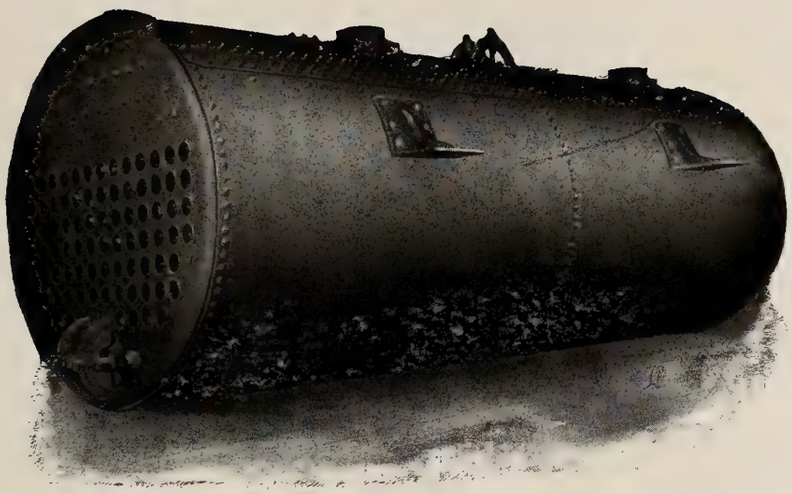
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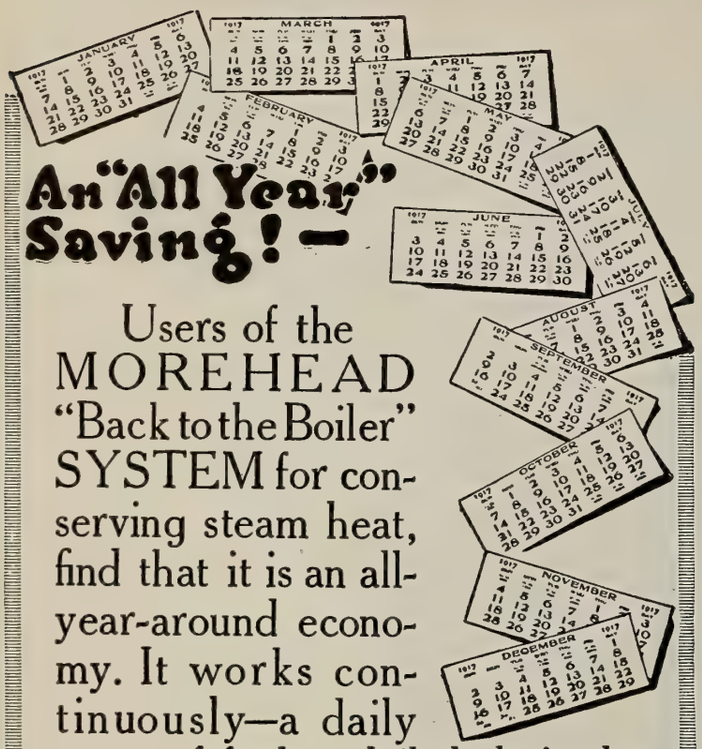
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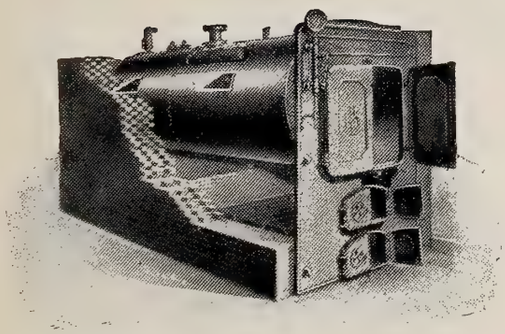


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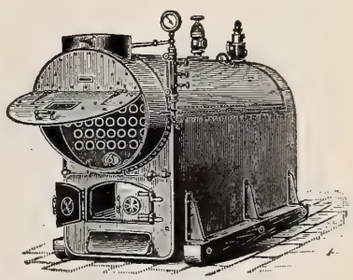
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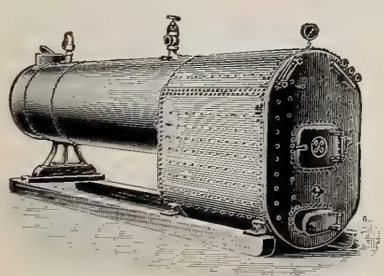


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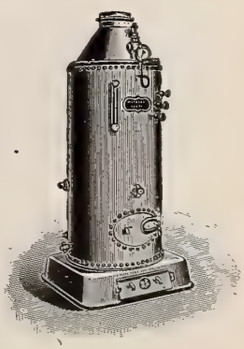
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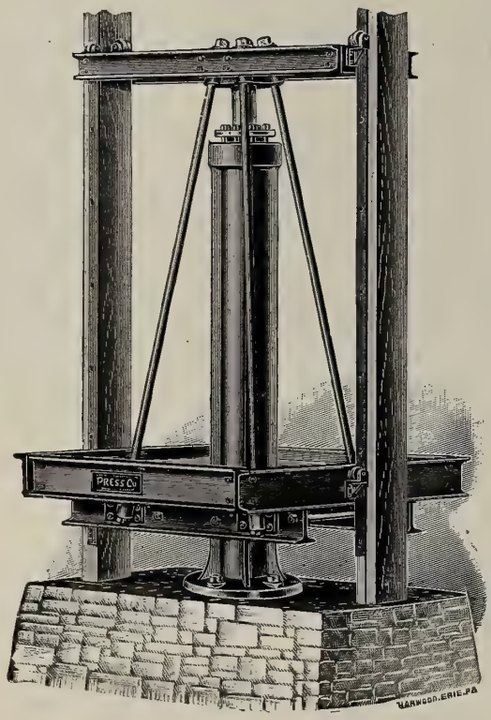
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HYDRAULIC PUMPS and ACCUMULATORS

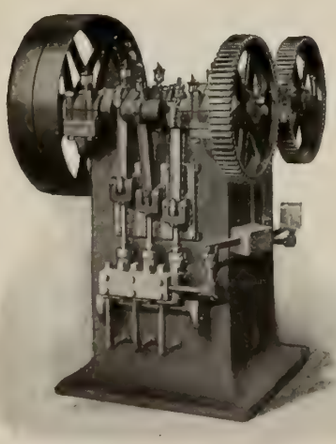
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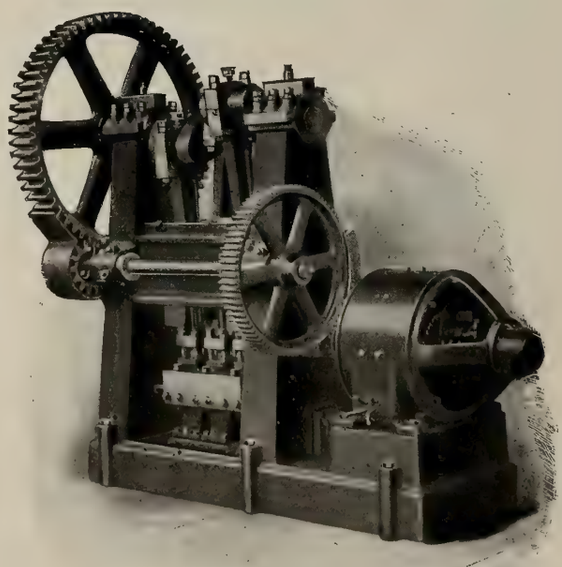


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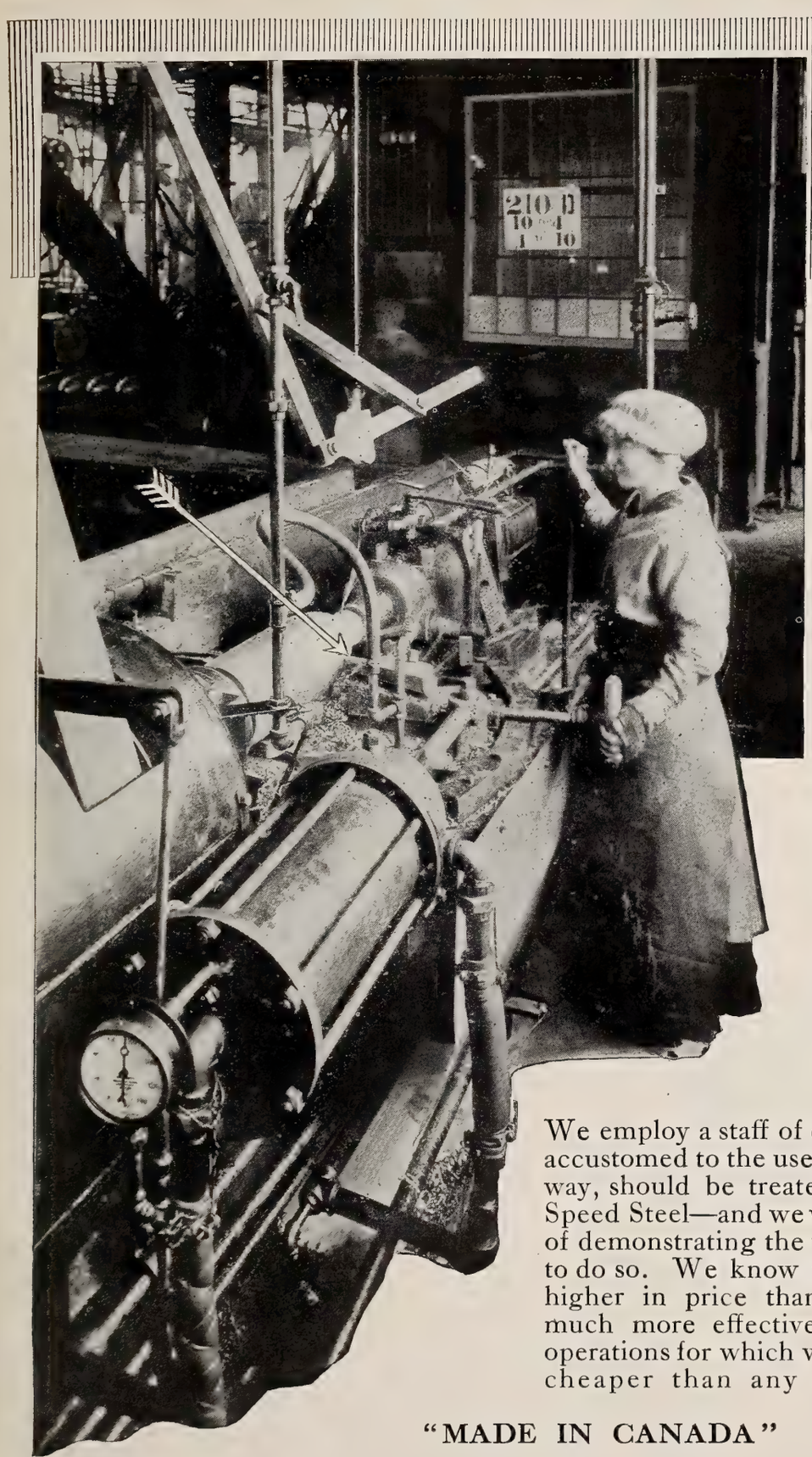


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STELLITE

STELLITE is an alloy of rare metals, containing no iron; so hard that it is being successfully used everywhere in Canada in cutting cast iron and all qualities of steel, including Nickel, Vanadium and other Alloy Steels.

So useful is this cutting metal in increasing production that in one large Toronto shop where the Management failed to supply the shop with Stellite, the individual workmen, one after another, called at our Warehouse in Toronto and bought STELLITE tools for themselves, to increase the output of their lathes and their own incomes.

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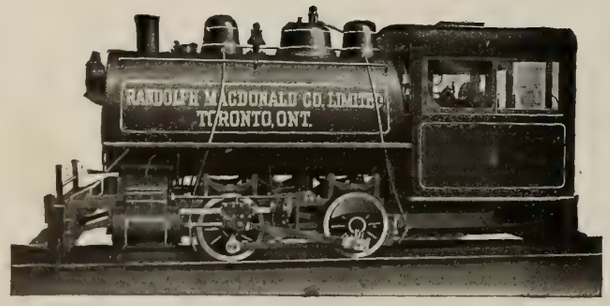
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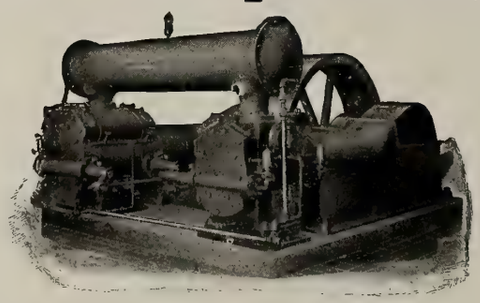


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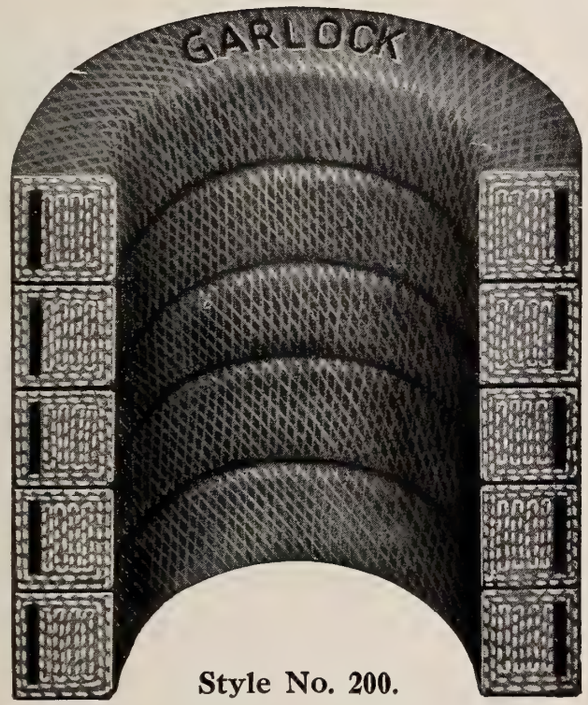
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Garlock High Pressure Piston Rod Packing



Style No. 200.

Is built up on a core consisting of several flattened tubes.

The tubes are braided from the highest grade of asbestos yarn, and are cemented together with the best rubber friction.

The tubes are cemented only on the outside, therefore the packing is lighter per linear foot than other types of high pressure packing.

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Our high pressure packing is not merely smeared on the outside with graphite and grease.

Every fibre of it is saturated with a specially prepared lubricant, which does not affect the rubber cushion or friction.

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Our high pressure packing is made by experts who have done nothing else for years but make that one type of packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

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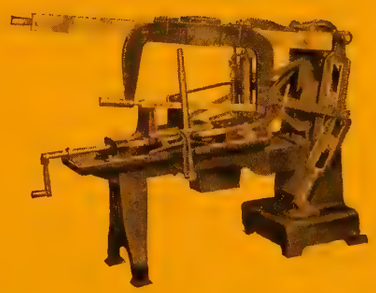
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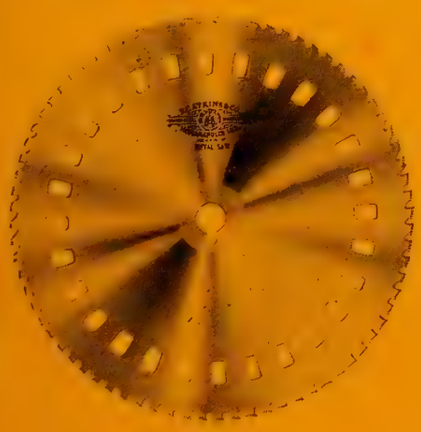
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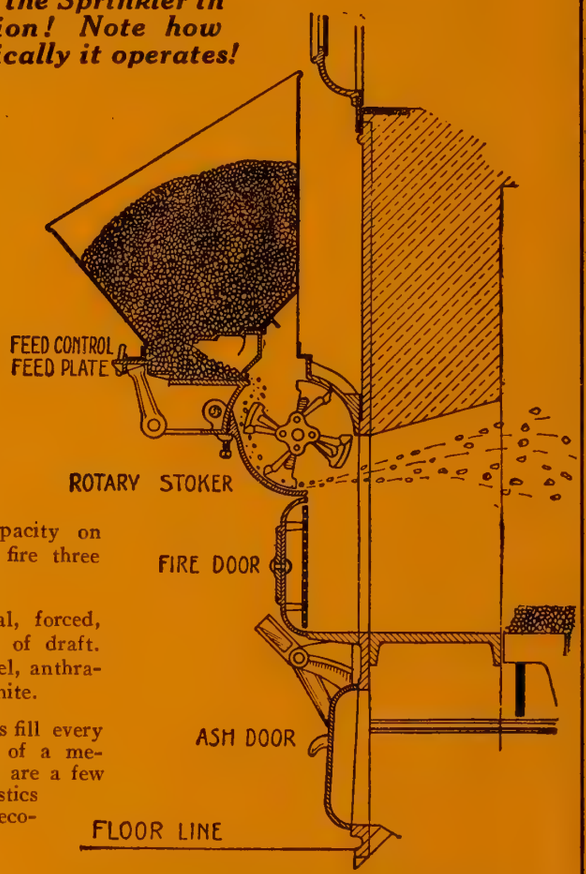
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Gives 170% boiler capacity on natural draft with a fire three inches thick.

Operates with natural, forced, induced or any kind of draft. Burns any kind of fuel, anthracite, bituminous or lignite.

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	P. Burns & Co., Vancouver, B.C.		6 "
	Dominion Power & Transmission Co., Hamilton, Ont.		3 "
"A"	Dominion Oil Cloth Co., Montreal		2 "
	Corporation of Vegreville, Alberta		4 "
"A"	City of Winnipeg General Hospital, Winnipeg,	1000 H.P.	8 "
"A" X	Gordon, Ironside & Fares, Winnipeg		3 Stokers
	City of Brandon, Brandon, Man.		2 "
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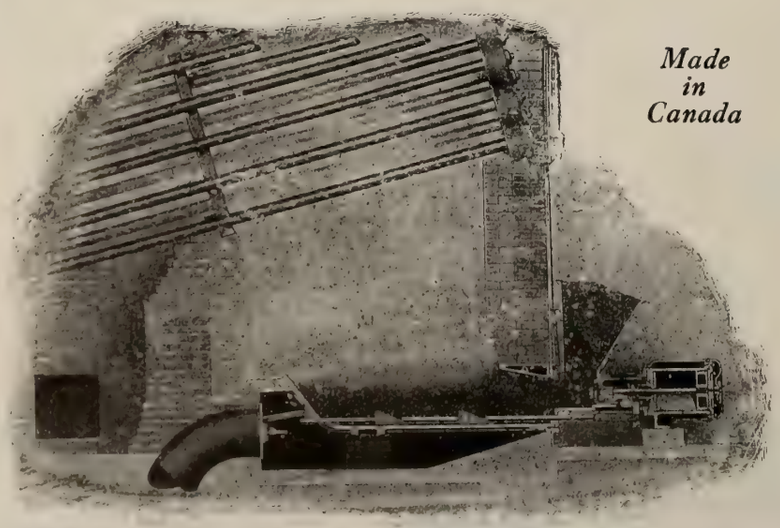
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Made in Canada

We can demonstrate this by a scientific analysis of the principles underlying the Jones. But a better argument than any analysis is contained in our records of actual results from its use under ordinary conditions, as told us by manufacturers who have been using **"The Jones"** for years. Actual, daily fuel savings, running from 15% to 25%, are common occurrences. And savings like this are what you want. They are the compelling argument.

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HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
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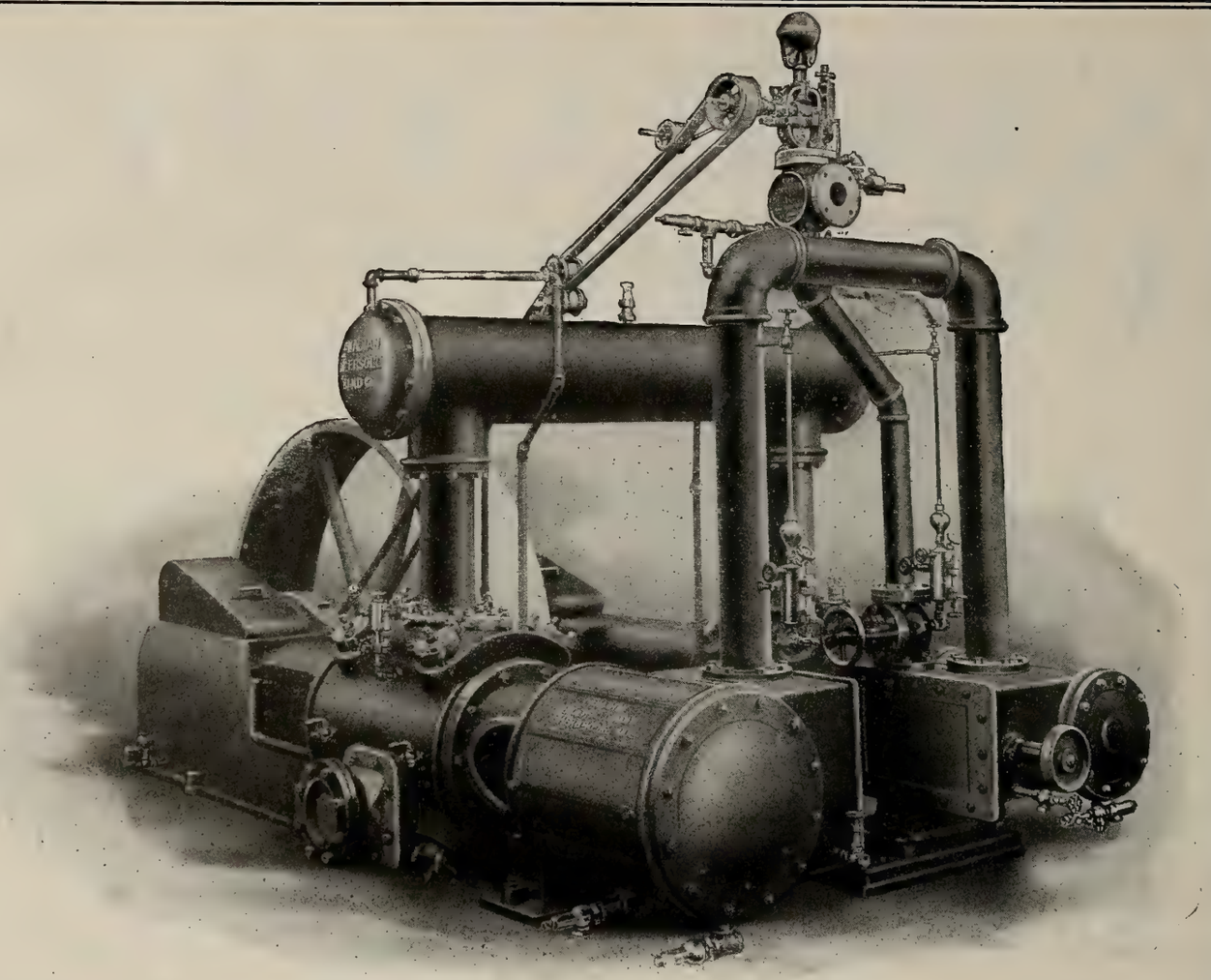
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Class "RL-3," Duplex Type, Steam Driven, Two Stage Air Compressor with Intercooler. Equipped with Speed and Pressure Governor, Meyer Adjustable Cut-off on High Pressure Steam Cylinder, Dust-proof Construction, Splash and Flood Lubrication System, and "Circo" Silent Leaf Valves
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Features Which Mean Economy

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The adjustable steam valve gear enables the steam consumption to be graded to suit the steam pressure and the load, resulting in economy closely approaching that of the releasing type of valve gear.

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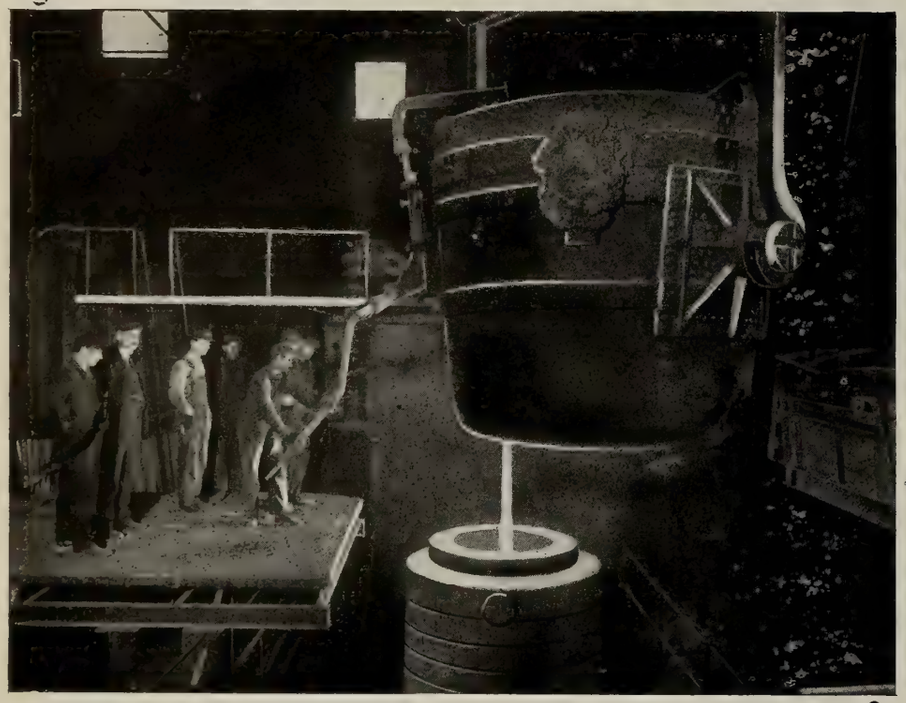
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STEEL & IRON
PRODUCTS
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A 30-Ton Ingot
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at
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"OLD SYDNEY COAL"

Shipped from North Sydney, N.S.

At Wabana, Nfld., the Company's Iron Mines are located, these being the richest in ore on the North American continent.

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Established 100 Years (1817-1917)

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Undivided Profits $1,557,034
Total Assets - - - $386,806,887

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OF CANADA

Established 1865 **Head Office, Winnipeg**

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6 Princes St., E.C. **Haymarket, S.W.**

Established in 1836. Incorporated by Royal Charter in 1840.

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Reserve Fund - $3,017,333

Statement to the Dominion Government (Condensed), 30th June, 1917.

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Other Liabilities	980,375
	$60,239,770

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Deposit with Government o/a Note Circulation	1,392,301
Government, Municipal and other Securities	10,697,795
Call and Short Loans	7,965,842
Current Loans and Discounts and other Assets	36,409,140
Bank Premises	2,318,201
	$69,433,987



The Canadian Salt Without a Fault

If you wish to impress on a customer the fact that some one article in your store is pure, you can't make a stronger comparison than to say, "It is as pure as Windsor Salt."

Windsor Salt has probably been used in her home for years.

Windsor Table Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED

The Merchants Bank of Canada

Head Office - MONTREAL

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Reserve Funds - -	7,421,292
Total Deposits - -	92,102,072
Total Assets - - -	121,130,558

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ANDREW A. ALLAN, F. ROBERTSON, THOS. AHEARN
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236 BRANCHES AND AGENCIES IN CANADA

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Deposits received and Interest allowed at best current rates

New York Agency: 63 and 65 WALL ST.

The Bank of Nova Scotia

ESTABLISHED 1832

Capital.....	$6,500,000
Reserve Fund	12,000,000
Total Assets	Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

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CUBA: Havana
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TRADES AND LABOUR BRANCH

NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800
HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.
D. M. MEDCALF, Chief Inspector of Steam Boilers.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.
W. C. McGHIE, Chairman of Board.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

Established 1849

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Offices Throughout the Civilized World

Executive Offices: Nos. 346 and 348 BROADWAY, N.Y. CITY, U.S.A.

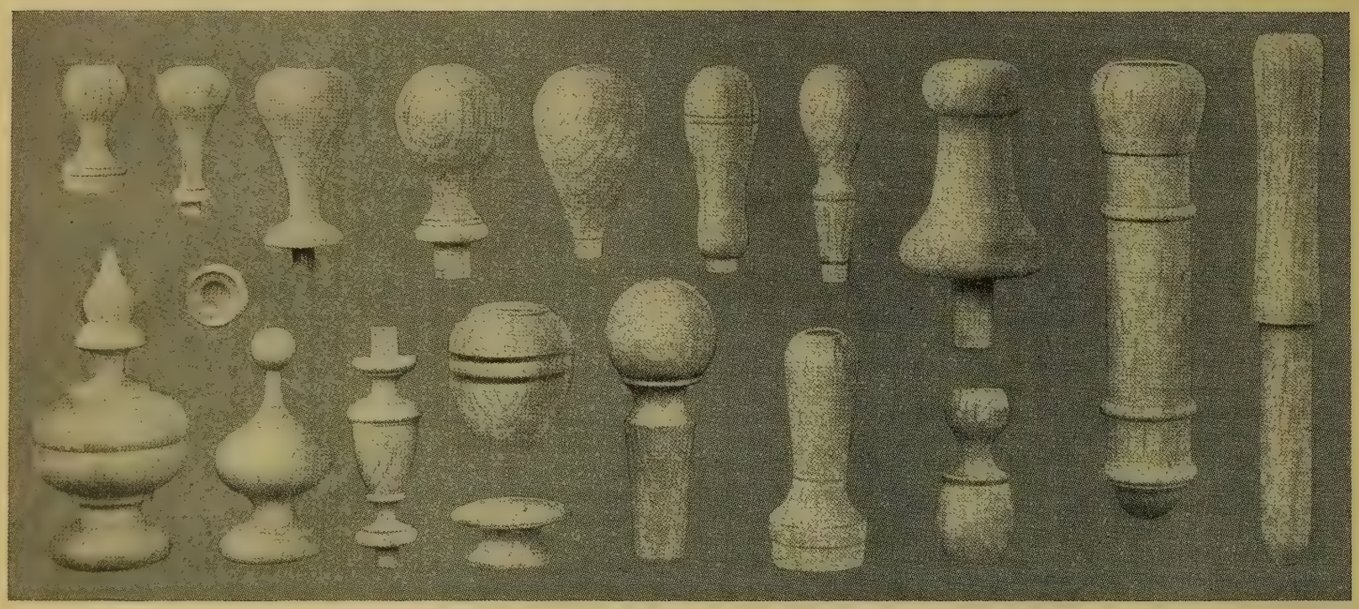
THE BRADSTREET COMPANY gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying, and promulgating information, no effort is spared, and no reasonable expense considered too great, that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world.

Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. CORRESPONDENCE INVITED.

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Montreal, Que.	Toronto, Ont.		Vancouver, B.C.
St. John, N.B.	Winnipeg, Man.	Calgary, Alta.	Victoria, B.C.

THOS. C. IRVING, Gen. Man. Western Canada, Toronto



Dowels and Wood Turnings

Those Smooth Dowels

The new dowel machine is a wonder for efficiency. The new process dowel made from it is round. Always round. There is nothing about the manufacturing process which could produce anything but a round dowel.

It is also always uniform in diameter and never varies more than a few thousandths of an inch from the measurements desired. The dowel is finished and polished with a clean cut lengthwise of the grain and not with a scraping cut crosswise of the grain, as in the old method.

These machines are adjustable to any size from 3/16 of an inch to one inch, making these changes as fine as to a 64th of an inch. Our smooth dowels are straight, round and perfect.

Special Shapes

We show above a few of the many shapes which we can turn out with our special automatic machinery.

We are in the centre of the hardwood district and can turn out any shape wanted, in any quantity, perfect and smooth, at short notice. Write us about anything which you may need that can be turned out of wood.

Dowels the Smooth Kind

Birch, Beech and Maple
Plain, per 1,000 Pieces

Length	3-16 in.	1-4 in.	3-8 in.	1-2 in.	5-8 in.
12 in.	$1.50	$1.50	$1.80	$2.20	$2.95
16	1.95	1.95	2.40	2.95	3.93
18	2.20	2.20	2.67	3.35	4.40
24	2.95	2.95	3.60	4.40	5.90
27	3.35	3.35	4.05	5.00	6.60
30	4.05	4.05	5.00	6.16	8.20
33	4.50	4.50	5.50	6.75	9.00
36	4.95	4.95	6.00	7.33	9.80
42	5.70	5.70	7.00	8.60	11.50
48	6.50	6.50	8.00	9.80	13.05
54	9.20	9.20	11.20	13.80	18.40
60	11.25	11.25	13.75	16.85	22.50
66	13.05	13.05	16.00	19.55	26.05
72	14.75	14.75	18.00	22.05	29.40
No. dowels to bundle	1000	500	200	200	100

Besides the above sizes, we make dowels up to 1 in. or any fraction thereof. In addition to the smooth kind we make the glue joint dowel in all sizes.

Tell us your wants and get our prices.

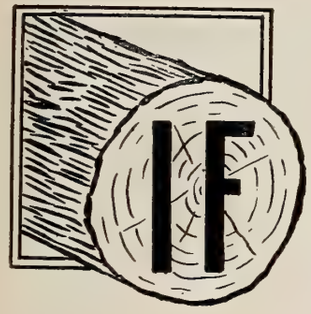
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FARM POINT, P.Q., CANADA

Makers of Wood Products and Toys

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you would reap the benefit of our large, carefully selected and well-manufactured stocks of

SPRUCE and PINE LUMBER

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Write for our monthly stock and price list.



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We build and erect all kinds of Structural Steel, Bridges, Roof Trusses, Bank and Office Railings, Stair Work, Elevator Grills, Fire Escapes, etc.

Over 5,000 Tons in Stock of
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4 inch to 30 inch

Square and Round Flue Linings, Inverts, Building Blocks

Fire Clay Stove and Range Bricks, Locomotive Arch Blocks

And All Shapes in Fire Clay

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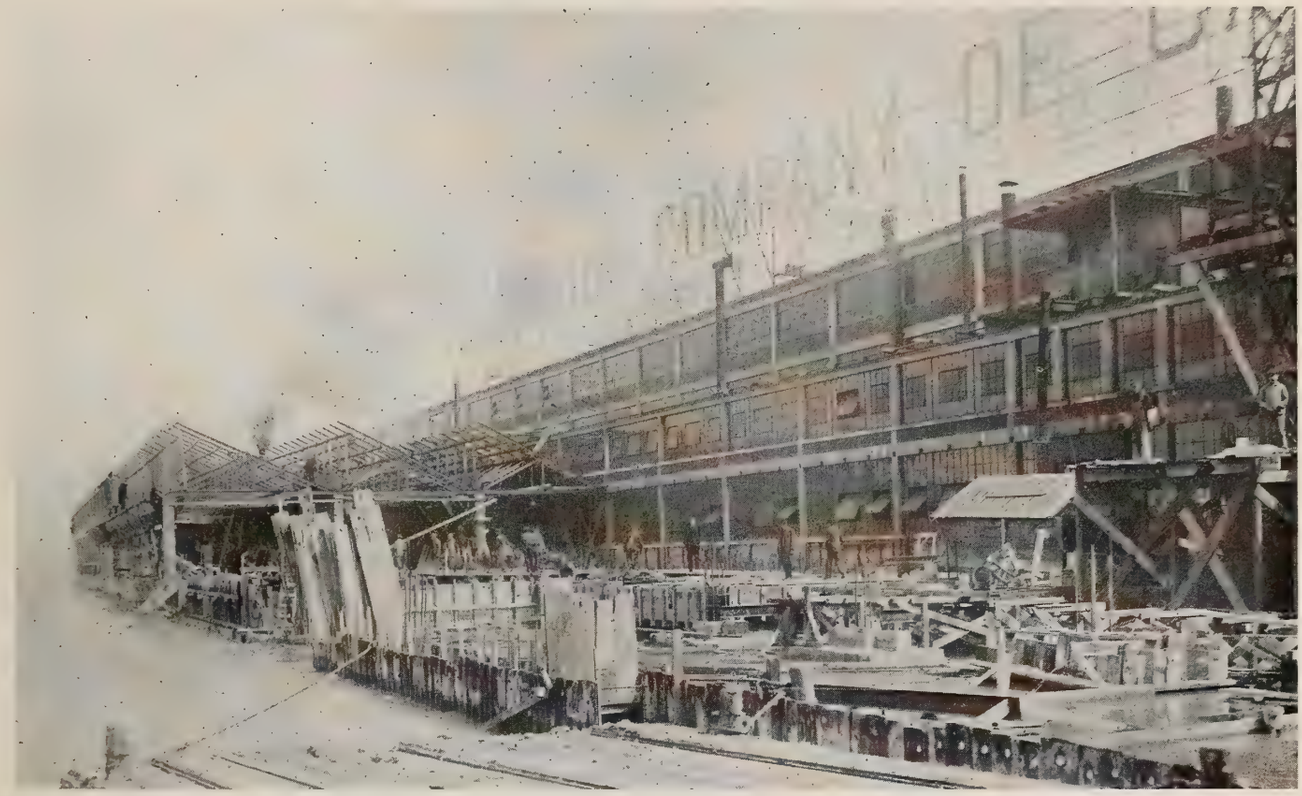


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WALKERVILLE - ONTARIO
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DURING the past seven years our men have worked without interruption winter and summer for the Ford Motor Company of Canada, Limited, at Ford, Ontario. We have had many new and difficult problems to solve. The photograph above shows a reinforced concrete building 70' x 700' in course of construction. This building was built in water from 15 to 20 feet in depth. There was also 840 feet of concrete wall to be built. This also was carried down from 15 to 20 feet below water. The entire structure is carried on piles. These problems have all been solved successfully and economically.

We would be pleased to solve your building problems.

WELLS & GRAY, Limited

Engineers and Contractors

248 Confederation Life Building TORONTO, ONTARIO

Branch Office : Bank of Commerce Building, Windsor, Ontario

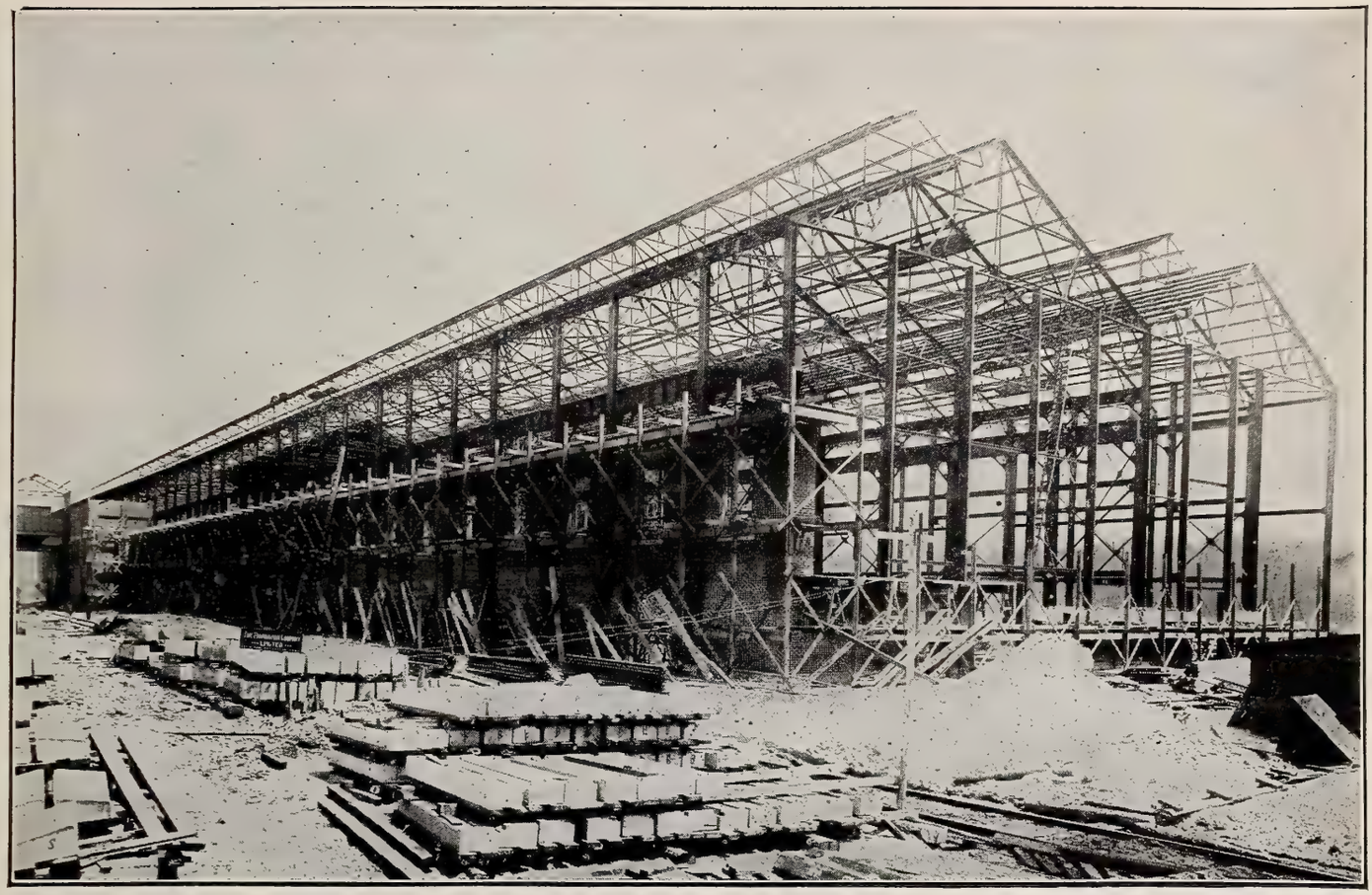


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Canadian Mathews Gravity Carrier Co., Limited

A. 484 RICHMOND ST. W., TORONTO



Progress on

"The Nickel Contract"

This is but one of the nineteen (19) buildings included in our contract with The International Nickel Company of Canada, Limited, at Port Colborne, Ontario.

We are constructing the entire plant, from preliminary engineering work to the installation of machinery in the completed buildings.

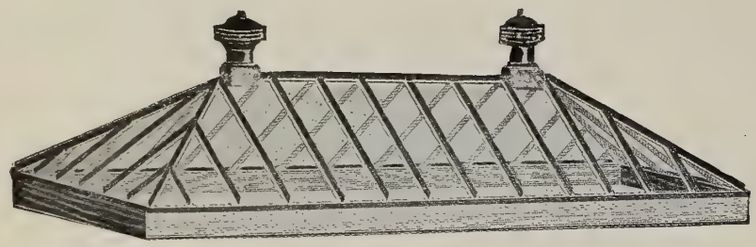
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Make Light and Air Earn Profits



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provide an improvement in working conditions that result in a definite improvement in production.

PEDLAR'S "PERFECT" SKYLIGHTS assure a maximum of daylight with a minimum of weight and trouble for repairs and upkeep. Made of galvanized iron, TONCAN, or copper. Water and storm proof. When glazed with ¼-inch wired glass, absolutely fireproof.

Supplied in styles that adapt them to any building or lighting requirement of special specifications. Write at once for prices and quotations.

PEDLAR'S "PERFECT" VENTILATORS

provide an even, controllable circulation of fresh air, in abundance, without draft.

Pedlar's "Perfect" Ventilator belongs to the automatic exhaust type—requires no power and has no revolving parts. Variable ventilation is obtained by raising or lowering the pipe by means of a chain. Cannot get out of order—nothing to wear—never needs repair.

Adaptable to any style of building or any ventilating requirement. Made with metal or glass top in galvanized iron, TONCAN METAL, or copper, in 13 sizes from 8 inches to 72 inches in diameter.

Write for full particulars and prices.



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1539

DOMINION BRIDGE COMPANY, Limited

Head Office and Works : **Montreal, P.Q.**

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CAPACITY 135,000 TONS

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all Kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

Large Stock of Standard Structural Material at All Works

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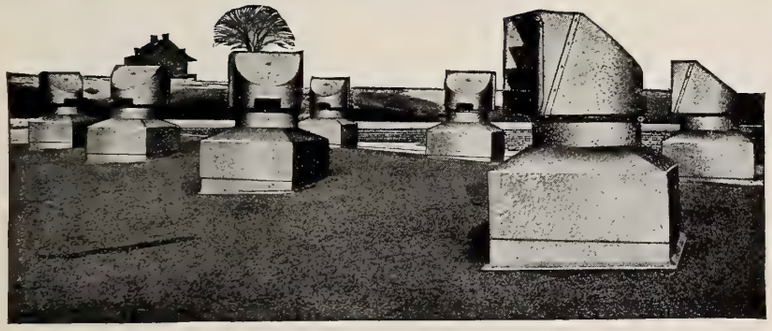
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ALL CLASSES OF BUILDING CONSTRUCTION

REINFORCED CONCRETE SPECIALISTS

OUR WORK SPEAKS FOR US



Plant of the Atlas Glass Co., Ltd., Montreal, Que.

Mopping Wet Foreheads is a Very Definite and Highly Expensive Summer Luxury. Avoid it.

Why let rising temperatures and sluggish air-conditions cut down production and profits through the summer? Use the ventilators that make good under the severest of conditions—

ORMSBY-SWARTWOUT
Rotary Ball-Bearing Ventilators

"Ormsby-Swartwouts" apply the free power of the passing breeze to create a suction which pulls the used air up and out of the building. The result is a continuous and even movement of air in which the workers can labor efficiently and in comfort.

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Unrivalled for Heavy Pressure Work



Here is a Babbitt Metal of unique merit, designed especially to meet the most exacting needs of modern machinery.

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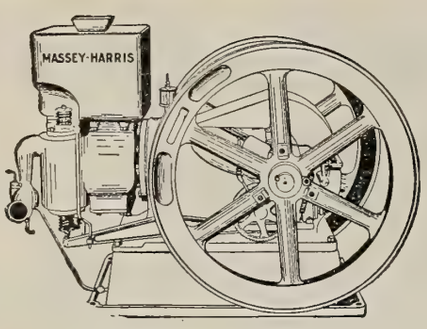
Are you looking for a range of Babbitts that will win new customers and increase your popularity with your old ones? Get acquainted with Domeko. Catalog on request.



Dominion Metal Company, Limited

FOSS & HILL MACHINERY COMPANY
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MASSEY-HARRIS ENGINES are good all the way through

¶ Every detail has been worked out with the greatest care --- nothing has been slighted, either in the design or construction, and as a result they have won an enviable reputation for reliability and efficiency.

¶ One of these engines affords a convenient source of power, always ready, winter or summer, and costs nothing for keep when not in use.

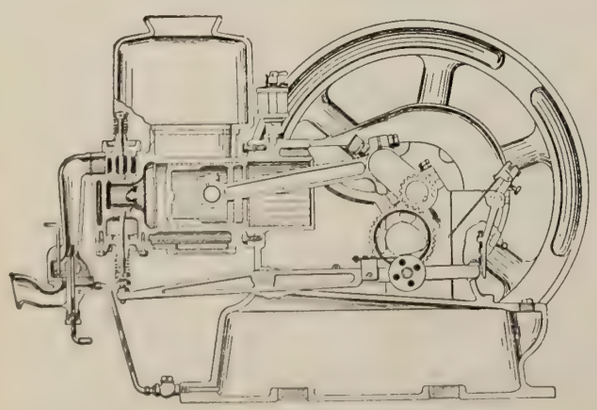
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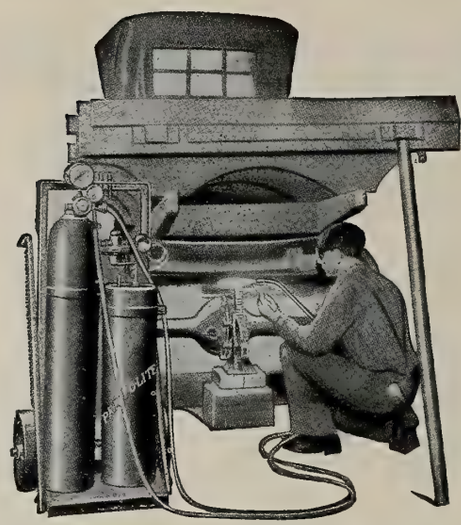
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TO-DAY thousands of metal workers in all lines of manufacture employ oxy-acetylene welding instead of bolts and rivets or threaded joints.

The finished product is neater and stronger. Production is simplified and speeded up—and many important economies are obtained.

Not only is oxy-acetylene welding of great value as a manufacturing process, but it effects big savings in repair work of all kinds—broken metal parts and castings quickly and inexpensively reclaimed for useful service—in factories, large and small, and in thousands of repair shops.

Prest-O-Lite

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employs both gases (acetylene and oxygen) in portable cylinders. Presto-O-Lite Dissolved Acetylene (ready-made carbide gas) is backed by Presto-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost. Write for literature. Address Dept. C-104.

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Welders, realizing this, are now using

IMPERIAL CARBIDE

because it produces acetylene of unusual purity. IMPERIAL CARBIDE is a superior grade of Calcium Carbide—made by the most modern methods from the best raw materials obtainable.

Imperial Carbide can be obtained from our Works or from any of our distributing points conveniently located throughout Canada.

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GENERAL OFFICES AND MILLS:

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COPPER & BRASS BROWN'S QUALITY ROLLING MILLS

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Carbide of Calcium, made by the CANADA CARBIDE COMPANY, Limited, is packed in Green Drums.

We make a first grade only

Where pure ACETYLENE is required you must have first grade CARBIDE.

The best costs you no more and gives you better results.

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Quebec

Canada Carbide Company, Limited
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Improved Methods Mean Increased Production



Double spirals of steel tubing assembled by welding

Oxy-Acetylene Welding is the Method

Universally adopted as being the most efficient, economical and practical, for joining metals for whatever purpose required.

This Matter is of Importance and Concerns YOU

There is a big application for its use wherever machinery is employed, and many manufacturing processes are simplified and improved by its use. For reclaiming broken parts of machinery, heavy castings, preventing waste, losses caused by delays in replacement, etc., it is indispensable.

"A.L.S." Welding and Cutting Equipment

is of the highest efficiency, and the result of years of practical experience and scientific tests by experts in the process. It is backed by "A.L.S." service with three factories in Canada and a staff of experts to ensure satisfaction to you. Buying "A.L.S." Oxy-Acetylene Welding Equipment is not "spending" money, it is an investment that will bring hundreds per cent. return.

A portable outfit occupies very little space and can be easily removed to wherever required for instant use. Welding is not a temporary repair, it restores the part to practically its original value.

Investigate to-day, all information supplied, every assistance given.

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Paper Packages Cost Less!

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Acetic Acid Refined
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Acetate of Soda
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Acetone Pure
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Made in Canada

Standard Chemical, Iron and Lumber Co.

OF CANADA, LIMITED

MONTREAL TORONTO WINNIPEG

ESTABLISHED 1875

The Boiler Inspection and Insurance Co. of Canada

Continental Life Building, Toronto

Issues Policies of Insurance after A CAREFUL INSPECTION OF THE BOILERS Covering LOSS OR DAMAGE TO PROPERTY and LOSS RESULTING FROM LOSS OF LIFE AND PERSONAL INJURIES. :: :: :: ::

Policies Guaranteed by THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY. :: :: ::

Assets for Security of Policy-holders, $4,552,020.43. :: ::

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H. N. ROBERTS - Vice-President and Sec'y
GEO. C. ROBB - - - Chief Engineer
A. E. EDKINS - - Ass't Chief Engineer

PRESSES

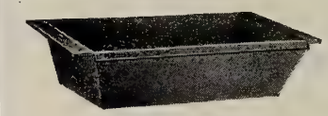
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Forging, Nosing and Marking Presses for all Size Shells
Presses for General Purposes

WILLIAM A. PERRIN, Limited TORONTO CANADA

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Steel Shop Boxes, Foundry Boxes, Shelf Boxes, Shop Barrels, Stools, Oily Waste Cans, Garbage Cans.

Gasoline Tanks and Pumps, Pressure Tanks, Storage Tanks, Smoke Stacks.

Anything in Black or Galvanized Sheet Metal up to ⅛ thickness. Send blue print or rough drawing and get our prices.

Sheet Steel Sundries for manufacturers is one of our specialties.

Write us

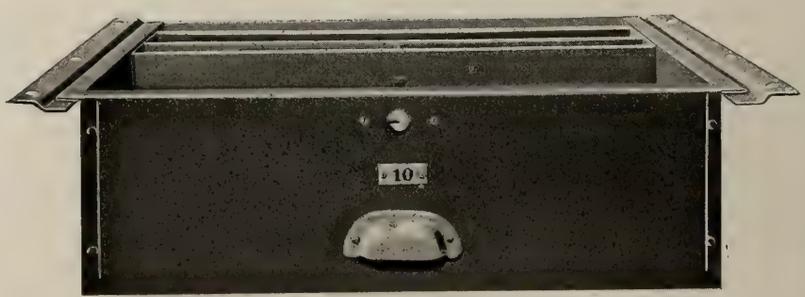
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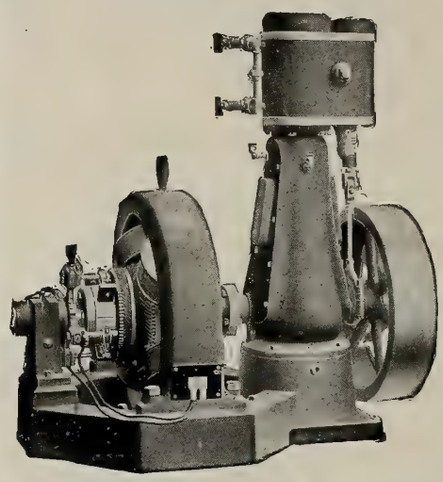
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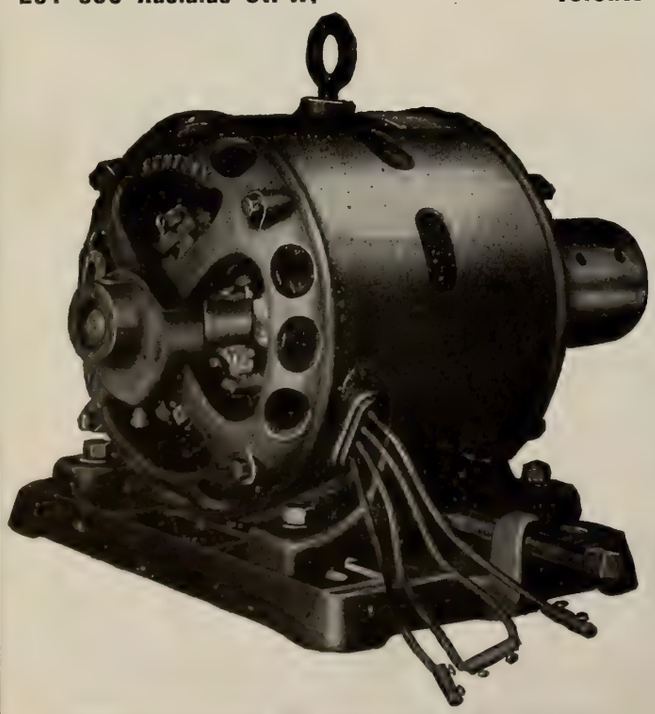
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CANADIAN OIL COMPANIES LIMITED
Quality First
NATIONAL BRANDS

WHITE LEAD
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COLORS IN OIL
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BLACK JAPANS
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CUP GREASE
LINSEED OIL SOAP



Taken from 1916 Catalogue of D. E. Black & Co., Limited, Calgary. We handled photographing, making engravings, and all the manifold details of this successful publication.

Color-printing tells your story at a glance.

It is the *most convincing* advertising because prospects *see* the goods they are asked to buy.

For them it is just like "shopping in person"—for you it means *bigger returns from your catalogue investment.*

There is nothing in merchandise we cannot reproduce in lifelike colors—our *equipment* is ample and modern, our *experience* is extensive, and our *service* is complete.

Your proposition will interest us. Write or call.

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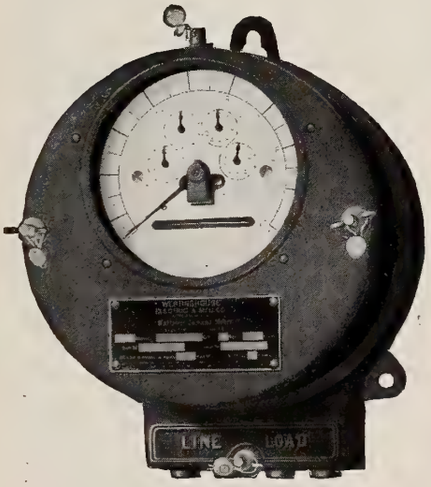
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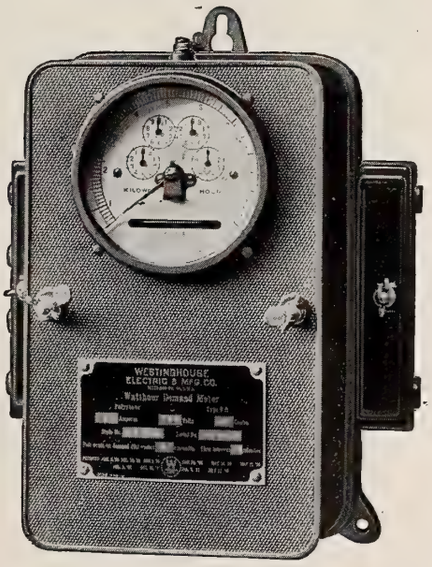
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Good roads decrease the taxpayer's bills—

THE driving-wheels of every automobile do exactly the same thing every time they go around—*they pry and grind into the road-surface.*

Every point, no bigger than a pin-head, on the circumference of these driving-wheels is the end of a lever stretching from the axle to the ground, and that lever digs at the road to move the car along.

It is that incessant dig and pry of the driving-wheels that tear up the macadam roads, that grind out the dust, that loosen the stones. The front wheels are quite innocent. It's the fierce driving-wheels that ruin the macadam.

Horses' hoofs also tear up the road-surface in the same way and throw it to the four winds.

Do you wonder that ordinary roads wear out with thousands of driving-wheels and thousands of horses' hoofs digging at the surface?

And they dig deep into the citizen's pocket, for repairing those roads is a costly proposition.

The way to avoid all this waste is to build roads suited to *modern traffic!*

That means, in most cases, Tarvia roads, for such roads are specially designed to meet these trying conditions at a very low cost.

Tarvia roads resist the dig of the automobiles three times as long as the old macadam without any repairs. They resist horses' hoofs because they have a plastic surface instead of a brittle one.

The use of Tarvia insures a road that is smooth, dustless, waterproof and durable.

There are hundreds of Tarvia roads in Canada. Many of the great Boulevards and Park Systems have been treated with this material.

Wherever a road is treated with Tarvia the traffic instantly increases, because automobilists, teamsters and drivers of vehicles of every sort like this easy-traction, dustless, mudless surface.

And most important of all, the use of Tarvia in the end usually costs the taxpayer nothing, because its cost is more than paid for in the annual saving of maintenance cost.

Booklet on request. Address our nearest office.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems.

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If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will have prompt attention.

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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVIII. TORONTO, AUGUST, 1917 No. 4

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

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Canada's Agricultural Army.

"IN no way can you more effectively aid just now in crushing Germany than by securing recruits for Canada's agricultural army; in no way can you more effectively play Germany's game than by showing yourself indifferent to this vital problem."

In this pointed language an appeal has been made to members of the Canadian Manufacturers' Association to come to the help of the nation in a time of great emergency. For the harvesting of this year's crop is a national crisis, in the truest sense of the term. With the food situation confronting our Allies in Europe, and with the high cost of living at home, it should be a solemn obligation resting upon everyone of us to see that not one dollar's worth of farm produce is allowed to go to waste through lack of labor properly to care for it. We may not be faced with actual starvation ourselves, but nations that have made immensely greater sacrifices than we have made, nations moreover that are fighting our battles, are already on short rations and may soon have to submit to further reductions in their supply of daily bread. Under such circumstances, for us to be parties to waste of any kind of food is almost treasonable negligence.

Farm crops must be harvested when they are ready for harvest; the delay of even a few days may make all the difference between a sufficiency and a famine. It is absolutely imperative, therefore, that when the crops reach maturity there should be an adequate supply of labor immediately available to gather them in. Badly as we need the help in our factories, we should be well content to forego temporary profits, if need be to suffer actual loss, rather than prejudice our common cause by withholding help we are in a position to give. Private interests are as nothing compared with the straits the Empire may find itself in if Canada fails to provide the food that is expected of her.

The practical suggestion made was that manufacturers should make an immediate canvass of their working forces, with a view first to ascertaining the names of those who have had farm experience, and next to persuading as many in that class as possible to volunteer their services temporarily as farm help during harvest.

The Manufacturers and the Flag.

AN eastern M.P.P., recently interviewed, expressed some startling sentiments on the Flag of Canada. Said he, "You see, we are not French; we are not English; we are just Canadian. We do not feel any obligation to take part in foreign wars." "If you are not French, why are so many French flags flown through the Province?" was the rejoinder. "Oh, I don't know. I never thought of that. I guess they are mainly thought to be Canadian flags," continued the politician.

The flag of Canada is the Union Jack. Other than it, there is no Canadian flag. It therefore follows that any other flag whatsoever, purporting to be the flag of Canada, is incorrectly so designated. True, two subsidiary flags are sometimes mistaken for the Canadian flag. One is that flown on the ships of the Canadian Navy—that is, ships in the service of the Canadian Government for inland revenue fishery protection, customs, hydrographic surveys and such purposes, and it consists of a blue field with a Union Jack in the left top corner or chief place next to the flag staff, and the arms of Canada in the luff or lower right corner. The other flag is that flown by the Canadian merchant

marine, and consists of a red field, and a Union Jack and the arms of Canada placed similarly to those in the flag of the Canadian Navy.

The flag of a country is the visible emblem of allegiance to the Crown, and no other flag whatever than the Union Jack can be used in Canada except the two flags above noted without exposing the offender to a suspicion of disloyalty to the Crown.

This flag of ours, with its " red, white and blue," is the emblem of justice and liberty, of freedom of thought and action, of equal opportunity without distinction of race, color, or condition of birth. From our youth up we have been taught to love and revere it, to cherish the principles for which it stands, to glory in the Empire and the institutions that have developed under its protection. We have been taught to honor the memory of those patriots and heroes who first unfurled it to the breeze and under it achieved independence and liberty and created this new land and nation with its doors open to receive to its citizenship the oppressed and down-trodden from any land and clime, a land of opportunity and liberty. We cherish and reverence the names of those men who have directed its destinies down through the years, those who laid down their lives that the nation might be preserved an undivided union.

We have been taught to bow in cheerful submission to the authority the Union Jack represents for the preservation of the principles of justice and humanity; and now that we, in common with the Motherland, have been drawn into the present world struggle against our wills, and so impelled only because of the necessity of upholding before the world all these principles for which we as a nation have steadfastly stood and for maintaining inviolate the rights of our citizens and the dignity of our country, it becomes the duty of every citizen and manufacturer to give to our flag and nation the utmost loyalty and support and to do our part in assisting in this crisis to a successful issue out of the situation, so that *our flag,* the Union Jack, without a smirch on any of its folds and with every part undimmed, may continue to wave over a land of the free and the home of the brave.

Labor in the War.

A TOTAL of 22,192 trade unionists are reported to be serving in the Canadian expeditionary force—this according to the sixth annual report on labor organization in Canada recently issued by the Department of Labor. This is a good showing and organized labor is to be both congratulated and thanked for its splendid service. The total membership at the close of 1916 being 160,407, this means that approximately one man in seven has enlisted from the trade unions of the country.

There is something, however, to be said in qualification of a statement frequently heard that labor has provided the bulk of Canada's soldiers. Even the goodly number of 22,192 is but a small fraction of the total Canadian enlistments and, while doubtless the ranks of unorganized labor have contributed a large number of men, still it is by no means a fair assumption that labor, as distinguished from the professional, the clerical, the business and the agricultural classes, has dominated the Canadian expeditionary force.

The report of the Labor Department contains much of interest for those who make a study of trade union developments. Thus the circumstance that 828 of the 1,842 local branches in Canada are located in 18 cities is significant. Montreal occupies first place with 127 unions; Toronto comes second with 111; Winnipeg third with 75, and Vancouver fourth with 56.

It is reported that nearly all of the central labor organizations operating in Canada have benefit features. During 1916 the expenditures made on their account reached the substantial total of $12,502,128, of which $7,808,225 were paid in death benefits; $2,811,426 in strike benefits, and $1,120,186 in sickness and accident benefits. The 1916 payments, large as they bulked, were $2,063,237 less than the 1915 payments.

The Canadian Trade Corporation.

SENATOR NICHOLLS' committee charged with the task of evolving a plan for developing export trade after the war has brought forward a concrete proposal. Usually such committees are content with laying down principles without devising practical ways and means of putting such principles into force. But in Senator Nicholls we have a business man who appreciates to the full the importance of the practical, and so it is not unnatural to find that the special committee of the Senate over which he presides has produced a business-like proposition.

The formation of a Canadian trade and banking corporation, on the lines of the recently-established British Trade Corporation, is advocated, and the committee recommends that the Senate forward their report to the Prime Minister, " with the request that due regard and consideration be given to the importance and advisability of aiding in such manner as may be deemed prudent and advisable the formation of a Canadian Trade and Banking Corporation, which will meet the requirements set forth."

The committee refers to the evidence submitted before a committee appointed by the British Board of Trade for a like purpose. As a result of this evidence, the British Trade Corporation was brought into being, having for its objects among others the following:—

(*a*) To afford advice and financial assistance to British commercial and industrial undertakings and generally to further the development of British trade, industry and commerce.

(*b*) To assist in obtaining orders from abroad for British manufacturers and traders and to grant financial facilities for the execution of such orders.

(*c*) To acquaint themselves with the conditions of trade and with the business requirements of all countries of the world and to enter into banking arrangements with such countries with colonial and British foreign banks, or where necessary to open up branches in such countries.

(*d*) To establish, equip and maintain information bureaus in close touch with the Department of Commercial Intelligence of the Board of Trade for furnishing British merchants or manufacturers and the business community generally with reliable data and information upon openings for trade, new contracts, state and other loan and issue proposals, and generally upon all matters relating to foreign trade and business, and to undertake the examination of industrial projects.

(*e*) To act as an agent for carrying through overseas commercial and financial transactions in which His Majesty's Government may be interested and to receive official recognition and assistance.

The committee, it is gratifying to know, went to the trouble of sounding certain of the chartered banks and leading industrial and commercial companies and individuals as to their willingness to consider favorably the organization and operation of a Canadian Trade Corporation and found a general desire to support the movement.

Car Conservation.

CIRCULARS have been sent to members from time to time calling attention to the serious shortage of railway equipment of all kinds and terminal facilities, and the necessity for co-operation on the part of all concerned. The last bulletin distributed called attention to the fact that consignees can help by ordering full carloads. To increase the average carload by one ton would be equivalent to placing 10,960 additional freight cars in service in Canada. To load fully the cars would go a long way towards solving our transportation difficulties. It is realized that consignees cannot order full carloads, but they are urged to help by ordering as large units as possible. To most shippers and receivers such an appeal is unnecessary.

Another reason for loading cars to their capacity is the fact that a car with ten tons will occupy the same space as a car loaded with thirty tons or more. Much of our difficulty during the past winter was due to congestion in terminals, and whilst there is no doubt that this was due to conditions over which the public had no control, nevertheless a more economical use of railway equipment will assist in avoiding a repetition of this serious situation.

At a recent meeting in Chicago on this subject, particular attention was called to the necessity of loading all cars to their visible or carrying capacity. It was said in support of this that it costs more to handle two cars at the plant than one. Big loading cuts down expense at the plant and reduces selling cost.

Another way in which the public can help materially is by promptly loading and releasing cars. It is the duty of every shipper to load cars promptly, not necessarily taking advantage of the entire "free" time. Consignees, also, should unload every car immediately on receipt. To most this appeal is unnecessary. There are some, however, who appear to be satisfied if they release cars within what is known as "free" time. Again, others hold cars for storage, failing to realize that in doing so they are keeping the car out of service and causing serious terminal congestion. A recent investigation showed that if consignees would order freight from shippers so as to increase the average loading by five tons per car, and if they would reduce the average delay in unloading by twenty-four hours, car shortages would be prevented.

The question may naturally be asked, Why is it necessary to bring this matter so forcibly before the Canadian shipping public, as there is no great difficulty at the present time in getting cars? One of the reasons therefor is the serious situation in the United States. The railroads of the whole United States have been nationalized, or, in other words, are now under central direction of the so-called "Railroad War Board of Railway Presidents." The regular traffic has been larger probably than in any previous period in the history of the country. Daniel Willard, President of the Baltimore-Ohio, and Chairman of the Advisory Commission of the Council of National Defence, also Chairman of its Committee on Transportation, says:

"Traffic was heavy before the United States entered the war, because of the necessity of moving tremendous quantities of supplies, materials and finished products for the Allies, but since April 6th it has been increased tremendously. The reports for the month of April say that the railroads of the United States in that month handled over three billion more tons than were handled in the same month in 1916, an increase in business amounting to sixteen per cent. . . . Beginning with April 6th, business activity has been greater than ever before in America, I think. It was stimulated in many directions by the manufacture of uniforms, clothing, materials for the building of cantonments, making of ammunition, etc. This traffic was increased by the withdrawal of many of the lake boats, and the roads had to assume that extra burden. Boats were also withdrawn from coast traffic, both on the Atlantic and Pacific, and much of the bulk that has been going through the Panama Canal was turned over to the railroads. And there were other factors. For instance, the farmers of the country responded in fine spirit to the request of the Secretary of Agriculture that they plant more land. They planted thirty per cent. more land than a year ago, and called upon the railroads to move large quantities of agricultural implements, fertilizer, seed, etc.

"Before America's entrance into the war," Mr. Willard said, "there was serious railroad congestion, not because the railroads were broken down, but because traffic had been extraordinarily heavy and there was no concerted move possible to get greater efficiency. One of the first steps of the War Board was to request the railroads to give preference to the movement of coal, particularly coal for the Government, and that the second preference should be given to ore. Means for identifying Government shipments were devised and orders were sent out by the railroads to send Government freight through to destination whether or not there were through rates and divisions prevailing. Ways were also planned to accelerate allied shipments, after con-

ferences with representatives of the allied nations, and the roads were encouraged and urged to expedite the repair of cars and of locomotives and to load cars to their utmost capacity."

It is estimated that in all probability 500,000 railroad cars will shortly be in Government service, carrying materials needed for the prosecution of the war, such as lumber and other building materials for the army cantonments. These cars and the motive power necessary to haul them must be provided for out of the present equipment. Those who are well informed state that the estimate of the equipment necessary to move the supplies is below the mark. In fact, it was recently stated that nearly fifty per cent. of the rolling stock of the railroads of the United States would be required at an early date for Government service. This estimate is appreciated when it is realized that to move one field army of 80,000 men, 6,229 cars, made up into 366 trains with as many locomotives, are required. These 6,229 cars would be made up by 2,115 passenger, 385 baggage, 1,055 box, 189 stock and 775 flat cars. There are 2,350,000 railroad-owned freight cars in the United States, about 225,000 privately-owned freight cars—a total of 2,575,000, of which about 6.5 per cent., or 167,000, are normally under repair.

The situation is summed up in the following manner by the *Traffic World* (Chicago), July 21st:

"In normal times the railroads of the country haul for each individual close to eighteen tons a year. When the war preparation reaches its maximum, the average hauling per capita, it is reckoned, will be increased to more than eighteen tons. That hauling must be done with fewer cars and fewer engines than there were two years ago and one year ago."

Men who have followed closely the car supply state that there has been a decrease in cars between June 30th, 1914, and January 1st, 1917, of almost 50,000. This, however, has been questioned to some extent. The *Traffic World* continues:

"There is no dispute, however, about the proposition that in a month or six weeks the car question will be one of the greatest the country has ever had to solve."

In the same article it is stated that at present the railroads are hauling more coal than they did a year ago. They are hauling twenty-five per cent. more, but the reported car shortage at the mines is greater than it was a year ago. That is explained by the fact that mine operators have increased their demands for cars. According to the reports of the American Railroad Association, while the railroads are furnishing only seventy per cent. of the requirements of the mines, the railroads are hauling more coal, and cars are being loaded heavier.

High officials of Canadian railroads advise that by all working together there should be no difficulty in taking care of the situation. Another way in which the consignees can assist in relieving congestion in terminals is to instruct shippers to consign direct to final destination, so that cars may be placed where they are to be unloaded immediately on arrival.

All members are urged to do everything they possibly can to assist in meeting the situation.

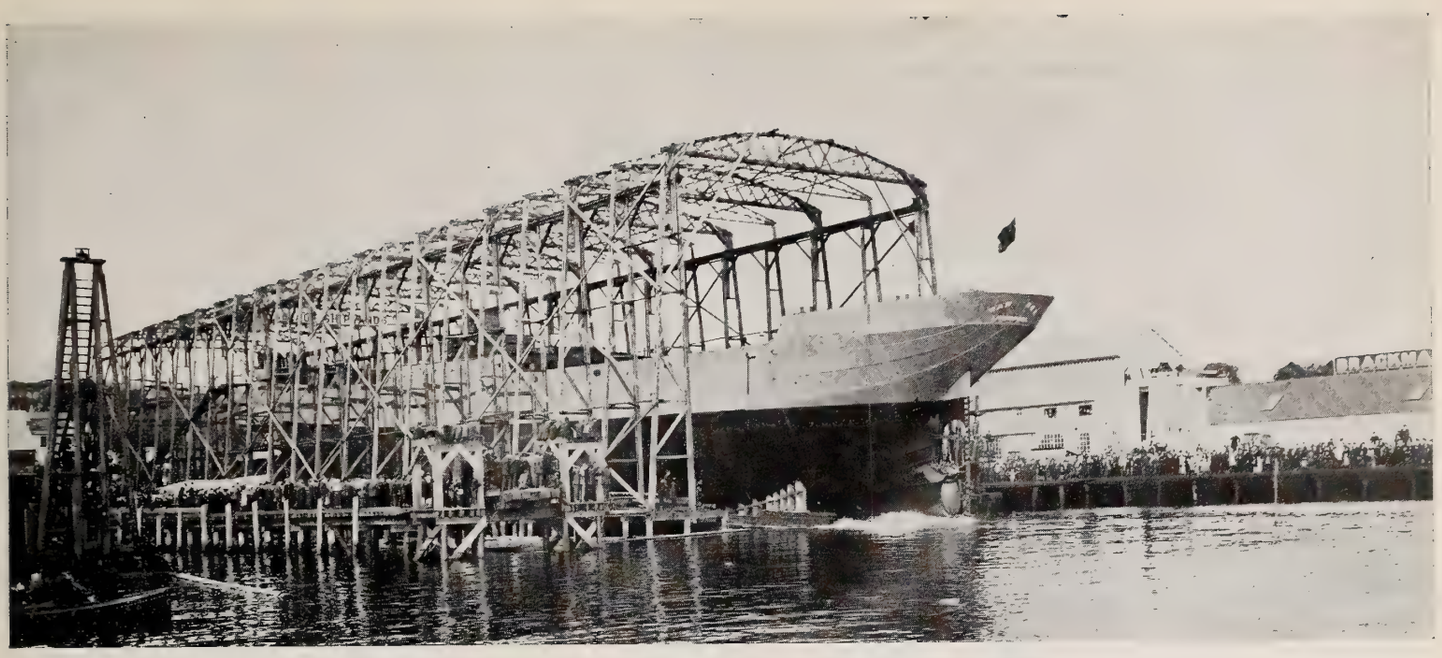
Canadian National Exhibition.

THE Canadian National Exhibition, 1917, that opens on the twenty-seventh of this month, represents, as does no other feature of like character, the progress and development of Canadian industry. It affords an opportunity to realize the possibilities of our magnificent country and enables us to become better acquainted with the extent of our natural heritage; to learn whether the manufacturer is doing his bit to keep Canada in the forefront of nations, and whether the farmer is maintaining the Dominion in her proud position as the "Granary of the Empire."

This year, a year of unexcelled trade by Canada, the Exhibition ought to excel itself from both the business-man's and the visiting public's point of view. Abundant proofs that Canada is holding her own in industrial pursuits, are on every side at the Exhibition. It touches upon all important branches of human activity, and is of great intrinsic educational value. The very latest that mechanical skill and inventive genius can devise are here displayed in a worthy exemplification of the industrial arts and material progress of the Dominion. Of the 500,000 square feet of exhibit space, which is seldom sufficient to meet the demand, about seventy-five per cent. is placed at the disposal of the manufacturers. There are over seventy permanent buildings used for exhibition purposes.

The facility with which Canada has turned from the arts of peace to proficiency in the science of war is one of the marvels of the recent world upheaval. A whole building will this year be devoted to the display of army equipment, which will include about 7,000 articles mostly manufactured in Canada. Another interesting item will be the exhibition of tractors for the first time, of special interest as an effective solution of the manless land problem. Even the older features are being so transformed that they will be scarcely recognized.

The Manufactures and Liberal Arts are directly represented on the Canadian National Exhibition Association, the C.M.A. having fifteen representatives, three of whom must be non-residents of Toronto, with five representatives from Toronto Board of Trade. The Directors alone are empowered to make all rules and regulations for the management of the Association, with whom also rests the duty of receiving and passing upon all applications by proposed exhibitors for exhibit space. While the C.N.E. is essentially national, it is also international—universal, even—in scope and appeal, and may be said to be the greatest short-time exhibition in the world.



Launching of the "War Dog" at the Wallace Yards

SHIPBUILDING IN VANCOUVER, B.C.

By ROBERT MACKAY FRIPP, L.A.C., F.S.A.

The following article, describing important industrial developments on the Pacific coast, was prepared for INDUSTRIAL CANADA *a couple of months ago, and in due course would have appeared in the July issue. Owing, however, to the necessity of devoting practically the entire July number to reports of the Annual Meeting of the Association, its publication was necessarily postponed until the present issue.*

RATHER more than a year ago shipbuilding in Vancouver was limited to the construction of small fishing and pleasure craft, scows, ferry-boats, and an occasional tug. Were repairs required by any of the numerous liners trading to this port they had to be made in Seattle or at Esquimalt, where there is a graving dock belonging to the days when that pleasant suburb of Victoria was a naval station.

More than twenty years ago the parts of two small steel cargo boats of some 250 tons apiece were brought from Great Britain and assembled in Vancouver at Coal Harbour, and though since then visitors have, at frequent intervals, enlarged upon the splendid natural facilities offered by Burrard's Inlet, False Creek and the Delta of the Fraser for shipbuilding, this initial effort was not followed by any further development.

Auxiliary Steam Sailing Ships.

To meet in some measure the insistent need for tonnage caused by the U-Boat activities (a euphemistic term for cold-blooded piracy), the late provincial government encouraged a beginning by extending aid for the establishment of yards for wooden shipbuilding, the number of vessels being limited to twenty-five, and a start was quickly made both in Victoria and Vancouver, the contracts for a number of auxiliary steam-sailing ships being let in July, 1916. These are all of one type, five-masted fore and afters, with twin Bolinder engines of 360 h.p., to give a speed of about 8 knots. These ships, which are 2,500 tons each and carry one and a half million feet of lumber, were fully described in the November issue of this magazine. Several have since been launched—one, the *Mabel Brown*, is now on her first outward voyage, and as one goes on the ferry to North Vancouver the *Margaret Haney* may be seen completing her deck load alongside the Hastings sawmill.

Activities Along Waterfront.

As the ferry approaches North Vancouver, evidences of the new industry appear on all sides; right alongside the landing stage is the Wallace Shipbuilding Yard No. 1, devoted to the construction of steel ships. Towering high above the stage is the first of these to be built in Western Canada, a freighter of 4,800 tons, ready for launching. Next to her is a local coaster on the marine railway, receiving her final touches of paint before being returned to her element. Immediately to the west of the ferry stage lies an 1,800-ton steamer undergoing a strange transformation; she is old, but tonnage these days is tonnage, so she lies hauled up to a temporary dock, to be sheeted externally with stout fir planks rivetted to her strengthened frame. Her old engines removed for new oil-burning engines, masts and sails, she will in a few weeks appear as an auxiliary steam-sailing ship.

A hundred yards further west is an old-time stern-wheeler, once well known as plying between New Westminster and Victoria, and now undergoing a general overhauling preparatory to the summer service on Howe Sound. Beyond lies the Wallace Company's Shipbuilding Yard No. 2, a large area of reclaimed and filled land adjoining the tracks of the Pacific Great Eastern Railway; and alongside the wharf is one of the five-masters recently launched and now in the hands of the engineers and riggers.

Booms of logs and scows of lumber fill in much of the waterfront. In the yard is the massive frame of one ship almost ready for her sheathing; there is the keel of yet another; there is space for a third, and finally yet another in an advanced stage of construction, and alive with men, inside and out; in a very short while she, too, will take the water.

Between four and five hundred men are employed in and about the yard, where there is a well-appointed wood-working shop in which the ponderous knees are shaped and the

other heavy timbers deftly handled. Stringers 90 ft. in length, posts 18 in. x 18 in. and 24 in. x 24 in.; rails, pin rails, and hatch combings, all of splendid Douglas fir of heroic dimensions, are being adzed, broadaxed, planed and wrought by hand and machine, carried by cranes as though bundles of toothpicks, to the accompanying music of a myriad caulkers' chisels, steel drills and clanking hammers.

A Memorable Occasion.

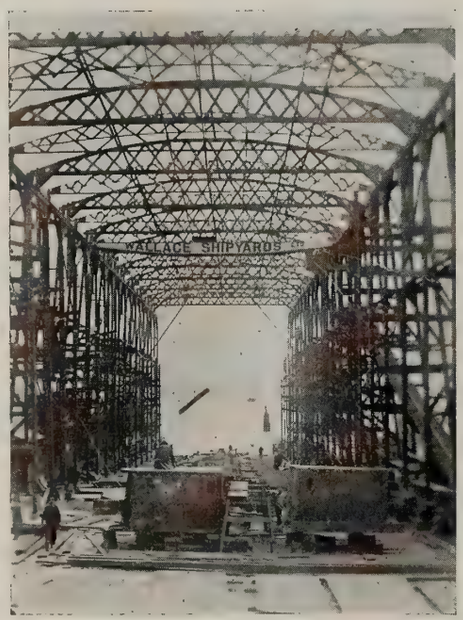
May 17th, 1917, a memorable day for North Vancouver. Indeed, it may be said to have been an epochal date for Western Canada, as the big freighter noticed on the ways as we came to the landing stage was during the afternoon successfully launched, to the shrill shrieking of sirens and whistles and amid the plaudits of a large and enthusiastic crowd of sightseers. The first steel steamship built under the British flag in the North Pacific, the *War Dog*, was commenced about eight months ago by the Wallace Shipbuilding Company for a Japanese firm, but she has been sold to

The captain's quarters are at the forward end of the bridge deck; the other officers are quartered in the bridge house, navigating officers to starboard, engineers to port; all are most comfortably furnished and finished in fir paneling, white enamelled, lighted by electricity and steam heated. Above the bridge deck is the flying bridge and pilot house; two lifeboats and a cutter are carried on the bridge deck. All the fittings not actually made in the Wallace yards are British Columbian products.

The machinery of the ship consists of one set of triple expansion surface condensing vertical marine engines, designed to develop 1,300 indicated horsepower with a boiler pressure of 160 pounds per square inch. The engines were built under the direction of Mr. H. Bakewell Taylor, the Chief Engineer and Assistant Superintendent of the Wallace Shipyards, Limited, and have cylinders of 24, 38, 62 inches diameter, and a stroke of 42 inches. They turn a 15-foot diameter propellor, driving the vessel at load draft at a speed of 9½ knots.



Wooden Ship on the Stocks



Gantry at Wallace Yards



Almost Ready for Launching

Messrs. Chambers & Company of Liverpool, for, it is generally understood, the famous Cunard Company. The difficulty of obtaining materials and the innumerable obstacles which seem to spring up in the face of a new enterprise, delayed the work of construction, but a second ship, to be immediately commenced, for which the building of the *War Dog* has done much to clear the way, will proceed very much more rapidly. She is 315 feet in length over all, 300 feet B.P.; 45 feet moulded beam; depth, 27 feet; draught, 22 ft. 6 in.; dead weight, 4,700 tons; displacement, 6,750 tons; speed, 9½ to 10 knots. She is built to Lloyd's highest class, has a single deck with poop, bridge and topgallant forecastle, single funnel, and two steel masts. The boilers, brought from Great Britain, are placed amidships between watertight bulkheads, and supply steam to a triple expansion reciprocating engine of 1,300 h.p., built in the engine works of the Wallace Shipyards, from designs by W. A. Menzies. The cargo winches are supplied, when in port, with steam from a donkey boiler on deck. Direct access to the steam steering gear is gained by placing it in a steel deckhouse just abaft the engine-room. Cargo is worked through four hatches and by means of two derricks and eight steam winches.

The machinery installation represents the best practice in cargo boat propulsion, all pumps being independent of the main engines and the condenser being built on the contra-flow principle. These engines, the first of any considerable size to be constructed in the Province, represent much loyal and hard work on the part of the foremen, chargemen and workmen of the engineering section of the plant, and without this close co-operation their erection would not have been possible. Great credit is due to the step undertaken by Mr. A. Wallace in deciding to build the machinery in the works, and to Mr. John Eadie, the General Manager of the yards, in having them built by a firm on the Inlet, and it is felt that the faith they have shown will be well justified when, in some six weeks' time, the vessel goes on her trials.

The Engines.

Steam is supplied by two single-ended Scotch marine return tube boilers, having a diameter of 14 feet 9 inches, and a length of 10 feet 9 inches, and working with coal under natural draft at a pressure of 160 pounds per square inch. The donkey boiler was also designed by Mr. A. F. Menzies, now chief engine draughtsman of the firm, and was built

by the Vulcan Iron Works of New Westminster. The winches and deck machinery were built at the North Shore Iron Works. The installation consists of independent air, feed, bilge, ballast and centrifugal circulating pumps, as also evaporator, feed heater, pressure filter and electric lighting set.

It is worthy of note that in the construction of these engines not a single important casting was lost, and no pattern was altered, and at the same time the firm were completing their 18-pounder shell contract, turning out some 500 shells per day. The scope of the engine works is further shown when it is known that in addition to the above work a new crank was built and installed in the S.S. *Chelohsin*, and installations, overhauls and repairs were carried out to a considerable number of deep sea and local vessels, as well as government ships. The engines for the *War Dog* are all dismantled and ready for installation in the vessel, and the works are busy on the designs and construction of the engines for a duplicate boat for the Imperial Government, as well as the completion of 16 shafts and struts for the schooners building in the Province.

The Men Responsible.

It may be noted that the engines were designed and built to Lloyd's highest class, under the inspection of Lloyd's inspector, Mr. T. G. Mitchell, and Mr. H. Darling, acting for the owners. Mr. Thom, the chief engineer of the vessel, has just arrived from Newcastle-on-Tyne, England, to take charge of the machinery for the owners.

In addition to engine works and machine shop is an efficiently equipped tool shop and a galvanizing plant. The gantry or travelling crane is designed to handle any of the material and equipment for steel steamers up to 8,800 tons. There are also two marine railways, one with a capacity of 2,500 tons and the other 1,500 tons.

While awaiting the launch of the *War Dog*, a curious reminder of the past, affording an almost pathetic contrast with the present, was a Siwash Indian war canoe of eleven paddles passing along the waterfront to the one time quiet and isolated Indian Reserve, now cut off from the waters of the Inlet by the piled track of the P. G. E. Ry., and almost hidden by the line of ships under construction and shut in by the lands of the reclamation. Here a very short while ago Indians might be constantly seen busy building their finely-shaped dugout craft, and making their equipment. To-day for each canoe are many motor-boats, the advantages of which have been so fully appreciated by the aboriginals that one large canoe has a motor installed, and one of the long racing canoes brought down the coast to compete in the sports on the 24th May had an overboard engine temporarily installed by her crew! The last war canoe had but just passed out of sight behind the steamer entering upon her reincarnation in the form of an auxiliary sailer, when the clanking hammers announced that the wedges were being driven out from beneath the first of the steel giants, the trigger was pulled, the bottle of champagne deftly smashed on the receding bow, and the great mass slid into the Inlet.

The effect of the inauguration of the new industry is far-reaching, attendant and sister industries rising in all directions. The Aetna Iron & Steel Company, Limited, recently incorporated at Victoria, has taken a five years' lease of the plant of the Port Moody Steel Works, which is being rearranged, and the first "open hearth" furnaces on this coast are being installed. The activities of the new company will be directed chiefly towards supplying the shipyards; more than two million dollars left the Province last year for steel pipe, castings, plates, bolts, nuts, etc., and it is intended to meet this demand. The output of the plant will at first be about forty tons a day, to be increased as required.



The "Mabel Brown"
First auxiliary schooner launched in British Columbia

Chief Demand for Capital.

The Vulcan Boiler Works of New Westminster have taken one of the sites of the new Industrial Island in False Creek, and are erecting buildings and preparing a plant for the production of marine engines.

It would appear that ships' plumbing supplies will be in considerable request, and a steady demand is being created for some forms of galvanized metals and many minor supplies. But the chief demand is for capital. A contract has just been awarded by the Dominion Government to Messrs. Harrison & Lamond for a wooden auxiliary steam-sailing ship,



The S.S. "War Dog," just after the Launch

to be built on the Fraser River at the foot of Main Street. This new ship seems to be in most respects similar to the vessels built and building in the Wallace Yards, the dimensions are the same, 225 feet length on keel, 44 feet beam, 19 feet moulded depth, capacity about 2,500 tons, rig same as the Wallace ships. This vessel is said to be a precursor of other wooden ships to be built on the Fraser, which seems to offer particular advantages to the builders of this type. The Harrison & Lamond ship is intended, like those built under the auspices of the Provincial Government, for the lumber carrying trade.

It is announced in the press that the Dominion Governmen, through the local agents of the Imperial Munitions Board, have awarded contracts in the Province for twenty-five wooden auxiliary steamers of a new type; particulars are not immediately available. It is believed that responsible men are ready to commence work upon yet another twenty-five should the Board desire to increase the number; the material is at hand in inexhaustible quantities, easily obtainable and as easily prepared—the necessary wood-working machinery being both simple and inexpensive to instal as compared with the plant required by steel shipbuilding, and there are plenty of men to handle it. The opinion is expressed that there are large numbers of skilled ship's carpenters and wooden shipwrights at present scattered about the coast who will be quickly drawn to this locality by the opportunity of resuming their old trades.

A FINE VESSEL.

Particulars Regarding Steel Ship Just Completed at New Glasgow, N.S.

The following description of the first ship built at the Nova Scotia Steel & Coal Company's plant at New Glasgow, and which was successfully launched last month, is of interest:—

Length over all	230 feet
Length, B. P.	220 feet
Breadth, moulded	35 feet
Depth, moulded	20 feet
Load draught	17 feet
Carrying capacity	1,900 tons
Load displacement	2,870 tons
Speed	10 knots

The general arrangement of the vessel, which is being built to Lloyd's 100 A1 Class, is illustrated in the photo appearing herewith. It will be seen that the steamer is of the single deck type, with bridge and topgallant forecastle, the propelling machinery being placed amidships. The forecastle deck is 26 feet long, while the length of the bridge is 56 feet—the space between main and bridge decks being available for cargo or bunkers. The ship is provided with complete double bottom 34 inches deep, of the cellular type, constructed with solid and open floors, having centre divisions and two longitudinal girders on each side, running the entire length. The space between the bottoms is arranged for water ballast, so that a desired draft can be obtained when the ship is sailing without cargo.



Steel Freighter built at New Glasgow

Four water-tight bulkheads extending to the main deck divide the cargo holds, of which there are two, from the machinery space and peaks. The forward hold has two hatchways, each 28 ft. 9 in. by 19 ft. wide, one hatchway of the same dimensions being fitted to the after hold.

The ship will have two steel masts, each about 55 ft. high above the main deck, and for the handling of cargo the foremast will be provided with two derricks, while the mainmast will have one, each derrick having a lifting capacity of three tons. For this purpose deck winches of the latest type will be supplied.

The vessel being of steel throughout, the frames are spaced 23 inches apart from the sternpost to just abaft the collision bulkhead, where they are spaced 20 inches, and, to cope with ice conditions, the spacing in the forepeak is reduced to 17 inches, with heavy side plating at the load water line. This, together with panting beams and stringers, makes the vessel exceptionally strong at the forward end. In the forehold, at a point between the two hatchways, a deep web and arch frame has been fitted 30 inches wide with large brackets to the deck, thus eliminating stanchions and leaving the hold clear of obstructions.

At the fore end of the bridge is a deck house containing, on the bridge deck level, the captain's room, one spare room, steward's room, dining room, pantry, stores, and other offices. Above this is the chart room, pilot house and navigating bridge. Abaft of the captain's quarters the chief officer and chief engineer, together with the junior officers and engineers, are housed, as is also the cook. Accommodation in the forecastle will be provided for five seamen and four firemen. Here also is located the crew's wash room, lamp room, and dunnage room.

Engine, supplied by the DeLaval Steam Turbine Company, Trenton, N.J., is of the direct impulse type, capable of developing 1,000 B.H.P., with a speed of 4,000 R.P.M. This is reduced to 80 R.P.M. at the propellor through two sets of reduction gears. The gears are supplied with oil from a tank placed on the main deck. A separate pump is used to draw the oil from gear casings and deliver to this tank through a water cooler. There is also a separate pump to supply cooling water.

Air and circulating pumps are driven by a separate engine capable of maintaining a vacuum of 28½ inches with the engine developing full power. The feed pump is driven by means of chain from propellor shaft. There is the usual arrangement of ballast, general purpose and bilge pumps.

Steam is furnished by two Scotch marine boilers 11 ft. 6 in. in diameter, and 11 ft. 6 in. long at a working pressure of 185 pounds. Steam steering engine is placed on the main deck aft, with chain drum extending through the bridge bulkhead.

The winches, three in number, are of the usual type and have been designed and built by the Pictou Foundry & Machine Company, Pictou, N.S.

The engines are the first of this type to be placed on any ship in Canada. They are also the first set of De Laval Turbines to be placed on any ship. The makers have subsequently secured orders for thirty of a similar type to be placed in vessels now building in the United States.



The Town of La Tuque, an Important Power Centre, on the St. Maurice River

THE CONSERVATION OF WATER POWER

How the Problem is Being Solved on the St. Maurice River

By W. A. CRAICK

WITH the increasing application of hydro-electric energy in Canadian industry, the importance of conserving the great water powers of the country is becoming more and more apparent. Hitherto the problem of the power-supply has been limited very largely to the mere harnessing of water-falls and, with the comparatively restricted demand for power, this was sufficient. To-day, however, it is not enough simply to instal a power plant at some convenient spot. Steps must be taken to ensure as large and as steady a flow of water all the year round as it is possible to obtain.

There is being worked out to-day in Canada one of the most interesting power conservation schemes in the world. It concerns the supply of water in the St. Maurice River in the Province of Quebec. The St. Maurice, while not the greatest power river in the Province, has been developed to such an extent as to merit the designation of the Niagara of Quebec. Its power plants at Shawinigan Falls, Grand Mere and La Tuque have a national fame, while the dependence of industry on the energy derived from its water-falls has grown to considerable proportions.

The St. Maurice takes its rise over three hundred miles north of the St. Lawrence, in a network of lakes covering a wide area of country. For two hundred miles this watercourse flows through an uninhabited territory. At La Tuque it enters a more civilized region, and until it joins the St. Lawrence at Three Rivers its valley is fairly well settled. Water powers are numerous and of great potentiality. Within a few miles of La Tuque are the undeveloped falls of La Gabelle and Les Gres, with heads of ten and forty feet respectively. At Shawinigan Falls, twenty-one miles upstream, are the immense power works of the Shawinigan Water & Power Co. At Grand Mere, twelve miles beyond, there is a fall of 75 feet, and here the Laurentide Company develops power for its paper mills. At La Tuque, one hundred miles inland, the river drops eighty feet, giving power possibilities of 75,000 h.p. Seven miles beyond come the Sans Nom Falls, with a head of 128 feet, while further on are the Vermilion, the Blancs, the Grand Coeurs, the La Grace and the De L'Ile Falls, varying in height from 16 to 136 feet, and still in the hands of the Crown.



St. Maurice Valley above La Tuque

Showing the picturesque route of the National Transcontinental Railway

There are very few rivers which can show even an approximately steady flow of water all the year round. The St. Lawrence comes nearest to the ideal in this regard, mainly because its flow is regulated by a great natural conservation system—the Great Lakes. Yet the variation of the St. Lawrence is as two to one. In the case of the St. Maurice, therefore, it is not surprising to find that the proportion of the flood to the minimum flow is as 30 to 1. What this means to the successful development



The Deep Gorge below Shawinigan Falls



Paper Mills of the Laurentide Co. at Grand Mere



Shawinigan Falls, the greatest power on the St. Maurice River

of power, at its various power sites, is obvious. As the minimum flow determines the limit to which the development of an even supply of electric energy may be carried, it follows that there is an immense wastage through the unrestricted movement of water during periods of flood.

Result of Conservation.

To regulate the current of the St. Maurice, and raise the minimum flow to much larger proportions, through holding back the flood waters, is a work of great economic importance, which was commenced a few years ago and is now nearing completion. It involves the construction far back in the hinterland of Quebec of an immense dam, which when finished will be capable of holding a greater volume of water than any similar reservoir in the world. From this dam the water will be served out as required, and in such a way as to ensure an even flow all the year round. The result will be to raise the minimum at Shawinigan Falls from 6,000 cubic feet per second to 12,000 cubic feet per second, thus exactly doubling the primary power at this point. Higher up the river the power will be more than doubled.

The site of the big dam is in the vicinity of the Falls of La Loutre, 237 miles upstream from Three Rivers. It may be reached conveniently by the National Transcontinental Railway. In fact, the existence of this line alone has made its construction possible. The railway, in its course from Quebec to Winnipeg, meets the St. Maurice at La Tuque and follows the river valley in a north-westerly direction to the confluence of the Manouan River, a distance of eighty-five miles. At this point river and railway separate, the former turning north and the latter continuing westward. The dam is about fifty miles north of the railway. As far as Chaudière Falls, or thirty-two miles upstream, the river is navigable, and traffic is handled by means of scows towed by gasoline launches and steam tugs. From Chaudière Falls onward, a standard gauge railway is operated, cars being hauled back and forth by donkey engines, which burn oil to avoid the danger of forest fires.

Progress of Construction.

The contract for the construction of the dam was let in the spring of 1915 by the Quebec Streams Commission, a body formed by the Quebec Government to undertake this and similar projects. A good deal of preliminary work was done in the 1915 season. Last summer the actual construction work was commenced, and good progress was made. The east channel of the river was unwatered and excavated, and the dam built up to elevation 1278 for the channel part and to 1300 for a short distance on either side. The unwatering of the west channel, which is the main part of the river, was commenced. A small power development was installed at the Falls, two miles downstream, for lighting purposes and to drive machinery, while a plant with a capacity of 500 cubic yards of masonry per day was established at the dam. Stone is secured from a quarry about a quarter of a mile away, while sand is procured from a pit six miles distant. It is anticipated that such progress will be made this summer as to admit of storing the flood waters of next spring in the dam.

When complete, the La Loutre dam will be 1,720 feet long, built in four sections, intersecting at obtuse angles. Seven hundred feet of the dam will form an overflow weir, its crest being ten feet below the crest of the remaining part of the dam. The measuring weir will be 375 feet in length. The wall will be 60 feet wide at the base and 20 feet at the top. Five gates, each 15 feet high and 12 feet wide, will be installed, giving a possible discharge of about 45,000 cubic feet of water per second. While by no means the largest dam in the world, so far as masonry is concerned, it is unsurpassed in the volume of water it will retain. The river above the dam flows through a series of lakes. The effect of building the dam will be to combine all the bodies of water into one vast reservoir over one hundred square miles in extent. The low-water level of the water in the various lakes will be raised from 7 feet in the case of the highest lake to 47 feet in the case of the lowest, and wide stretches of country will be flooded.

An Industrial Valley.

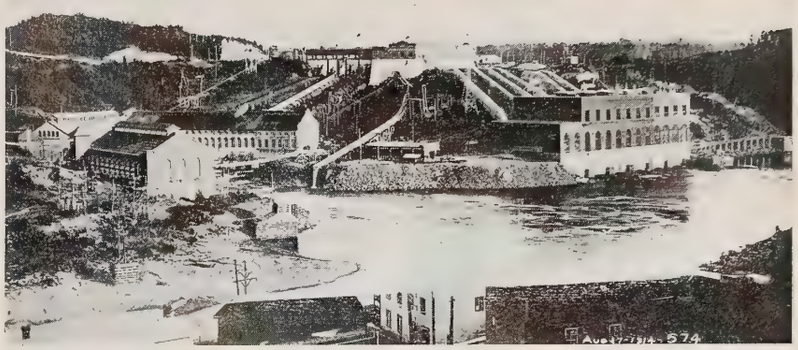
The valley of the St. Maurice River has long been famous for its industrial development. In the early days of French settlement it cradled the first iron foundry in Canada. Later it became noted for its lumber. More recently the production of pulp and paper has grown to enormous proportions, while to-day electro-chemical industries are taking their place among its foremost activities. Three Rivers, Shawinigan Falls, Grand Mere and La Tuque have stepped into the forefront of Canada's industrial centres, all owing their prominence to the electric energy developed at the various power sites along the river.

Up to the present time Shawinigan Falls has taken precedence as the greatest source of power on the St. Maurice. The water rights at this point are owned by the Shawinigan Water & Power Co., which sells a portion of the water to local manufacturing concerns and with the remainder operates its own 150,000 h.p. hydro-electric plant. Through various subsidiary companies, the Shawinigan Water & Power Co. distributes electric energy over its transmission lines as far west as Montreal, while it controls the light, power and traction systems in Three Rivers. Locally it operates plants producing carbide, carbon electrodes, metallic magnesium and other important electro-metallic products and provides the power for such notable industries as those of the Belgo-Canadian Pulp and Paper Co., the Northern Aluminum Co., and the Canadian Electro-Products, Limited.

Industrial Centres.

The dependence of the thriving city of Three Rivers on the power development at Shawinigan Falls is almost absolute. Here a considerable number of large industries, including sawmills, pulp and paper mills, textile factories, tanneries and boot and shoe factories are located, all deriving their power from the big plant up at Shawinigan.

At Grand Mere the power site is controlled by the Laurentide Power Co., in which the Shawinigan Water & Power Co. holds an interest. The available power amounts to 100,000 h.p., part of which will be taken by the Shawinigan Company to supplement the output of the present plant. The Laurentide Co., in its paper mills, consumes about 10,000 h.p. At La Tuque the power is controlled by the Brown Corporation, which operates large pulp mills at this point.



The Power Plants at Shawinigan Falls



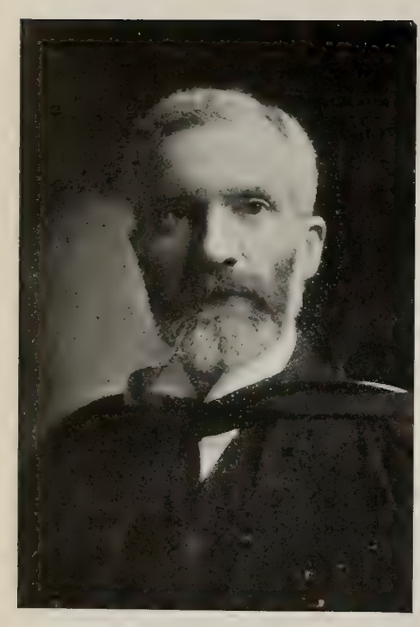
Plant of the Canada Carbide Co. at Shawinigan



Plant of the Belgo-Canadian Pulp Co. at Shawinigan Falls

ORGANIZING TO MEET OUR WAR DEBTS*

By PROFESSOR A. B. MACALLUM
Chairman of Advisory Council on Industrial and Scientific Research



PROF. A. B. MACALLUM

TO-DAY the world is facing a great crisis. That crisis has not reached its maximum stage. No one knows what is going to be the eventuality of it; no one has the prophetic insight. Further, no one living will see the final results of the crisis.

Even the most superficial in thinking, however, will recognize that the old world is gone and that a new one is dawning, not necessarily a millennium, perhaps something the very reverse of that, because this war is going to leave memories that this and the next and the third generation shall not forget. One hundred years will be necessary in order to efface some of the results.

The most superficial in thinking do not fully recognize to-day what are the forces that are involved. We see our own corner of the universe, but we do not see the whole field. It is too vast. Even the most endowed with discernment are unable to exactly get the bearings of all the factors, but there are certain elements which one can cast up, certain factors that one can advance as indicating to a certain degree the problems which we have to face. One of these factors is the enormous debt the world is going to have when this war closes. It is to-day estimated at $95,000,000,000; if it closes within another year it will be $125,000,000,000. Great Britain has to-day, leaving out her loans to her allies, a debt of about $19,000,000,000. The German national debt cannot be fully determined, but, according to a writer in *Plutus* (the German financial organ), for January last, the German national debt of Prussia, Bavaria and all the smaller states, is put at $30,000,000,000. France's debt is put down at $13,000,000,000; it is really nearer $15,000,000,000. Russia's debt is over $20,000,000,000 already.

An Incalculable Debt.

Now we can't get adjectives to qualify the magnitude of the total debt. We can use the word "colossal" without any clear indication of what that standardizes. It is beyond the conception of all our previous experience. At the end of the Napoleonic wars Great Britain had a debt of about one billion pounds. The whole Empire is going to have a debt, it is claimed, before this war is over, of nearly six billion pounds. Our own debt is already about a billion dollars, and it is prophesied it will yet reach a billion and a half.

What are the nations to do with these debts? Repudiate them? No nation that wishes to carry on business, to maintain faith with itself and with its own people, and prepare for the future with all its eventualities, can repudiate a debt unless it is physically impossible to pay it. Therefore these countries must pay their debts, but how? How will Germany pay her debt? She hasn't any resources except in potash salts. She has got the world's store of that material. As to raw products, she has a certain amount of iron, a certain amount of coal, but compared with the other countries what she has of natural resources along this line is comparatively small. She is, and she is bound to be, a trading and manufacturing nation, and therefore she must pay her debt, if she is going to pay it at all, out of her trade. Great Britain is also a trading and manufacturing nation. There you have a situation which calls for serious thought. Before the war Great Britain acted as if the world would forever jog along in a *laissez-faire* way; things were doing very well, why disturb them? The war found her unprepared, and unprepared especially from the scientific industrial side. She had not even the materials for her munitions of war; she had to start some of the industries that were concerned, and she found herself lacking completely in an organization that would enable her to meet the situation. That was inevitable—it was the result of the thinking of the Victorian period.

Must be Trade Protection.

I am not going to enter into the question of free trade and protection. I don't believe those cries are going to muster anything in the future, because, although there will be the advocates of both, they are not to be the fundamental problems of the future. There must be, of course, a certain amount of trade protection. There are few of us now that are doctrinaires. A nation must protect its own people and its own industries, whatever that method of protection may be. There will always be a dissension as to the character and extent of that protection, but it must protect its own industries, and the future is going to show that any doctrinaire reasoning on the point is all beside the mark.

We are facing a situation, not a theory. How is this debt to be paid? It can only be paid through the trade and industries, including agriculture, of the world. If Germany musters her organization as she has done in the past she will make the world pay her debt. It will be a struggle in any case, but if she organizes herself and carries on this organization as she has done in the past, she will inevitably levy the toll that is necessary to pay her debt upon the world. Are we prepared to pay it? If we do—of course this generation will not see the end—when the debt is paid, we shall be subject to that nation along all lines, not only in industry and agriculture, but in all else, and what Germany failed to achieve by her war, or is going to fail to accomplish by her war, she will accomplish in another way, unless we are prepared to meet her. This enormous debt will therefore compel a competition in trade the like of which has never been seen in the world before, and that competition will be carried on under a system which will be the keenest between the individual nations; not only between Germany and her enemies, but even between the Allies. Each nation

*Address delivered at the annual meeting of the Canadian Manufacturers Association, Winnipeg, June 13, 1917.

naturally in the struggle for existence will try to get advantages even from its friends, and thus there will be a competition between all the nations.

"We Must be Prepared."

It has been urged that there should be a prohibitive tariff wall erected against Germany. Well, it is easy to talk about that just now. We must not however lull ourselves into the feeling of security that any system of tariffs is going to be a security for us. We must be prepared. Great Britain has recognized that, and so have the Allies. The people of the Mother Country now recognize what a mistake they made in the last forty years. Her statesmen believe it was suicidal for her to carry on her government as she did, neglecting the fundamental interests, letting trade and industry shift for themselves. They have taken steps recently which practically constitute a reversal of the policy followed till now. They now say: "We shall no longer leave the development of the industries to haphazard, we must look after them, we must guide them, and we must see that they are equipped in a manner and to a degree that will enable them to compete with German commerce and industry." Accordingly, the British Government brought into existence an Advisory Council on scientific industrial research. That was constituted in the winter of 1915, and composed of scientific men who know a great deal about the industries of the country and who are giving their attention to their development. Some of the men who constitute that Council are amongst the first in the scientific world—men like Lord Rayleigh, for example. This Council has been working for two years. It has already achieved much and it received ample financial aid. During the first year of its existence it obtained from the Government a grant of twenty-five thousand pounds. In the second year it was voted forty thousand pounds, and in this Parliamentary session it has been given one million and thirty-eight thousand pounds to carry on scientific work connected with industries during the next five years.

Canada Late in the Field.

The example of Great Britain has been followed by Australia. Australia has constituted its Advisory Council and so also has New Zealand and South Africa. The American Government has a Research Council. They have what they call a National Defence Council, one sub-committee of which is given over to scientific research connected with industries; there is another one called the National Research Council, which has also been called into existence by the National Academy of Science and approved by President Wilson. France, Russia, Norway, Sweden, and even little Finland, have now their research commissions.

Canada has been a little late in getting into the field, but there was perhaps less reason for precipitation in the case of Canada than there was in either Great Britain, Australia or South Africa, for the simple reason that beside a nation that was at peace in this strife, and able to exploit its raw material and its manufactured products unhindered, there was no impelling urgency for action. Sir George Foster, who had this matter in charge, gave careful attention to the matter, and in the end brought into existence the Council of which I and Dr. Ruttan are the representatives here. This Council has certain functions to perform, functions in which you are vitally interested. One of these concerns the application to the industries of Canada of all the scientific methods that are now known which can advance these industries, which can expand them, while another involves the investigation of methods which will assist the development of these industries; that is, not only to apply the methods which have been found advantageous elsewhere, but also to find out new methods; not to be content with things as they are, but to go forward and seek for others, so that your competitors in the other markets of the world will not be better prepared for them than you are. In fact, to help the manufacturers in Canada to be in the very front rank of advance. A third function of the Council is that of finding out what this country has in the way of research power, and research power of all sorts.

Conflict of Theory and Practice.

I know there are a good many amongst you—I hear it every now and then said by some of you—that there is a difference between pure science and industrial science, as indicated in the terms "theory" and "practice." There is perhaps some excuse for this distinction. There are not a few who leave the laboratory with a very sane and experienced judgment, and attempt to apply in industry on a larger scale views which are serviceable only on the smaller scale in the laboratory. Those people are usually called theorists. In a statement recently made it was claimed that nineteen out of every twenty of the scientific men who are concerned in industries are largely theorists. Let me say that that is a mistake from one point of view. These men, of course, are simply largely untrained; they have not been trained on the larger scale; the universities do not attempt to supply the experience that the industrial field will give them, and consequently these so-called theorists are not experienced enough to aid the industries effectively, and they give therefore a stigma, so to speak, to what is called pure science. But nobody can predict to-day that there is a single scientific principle that may not ultimately be applied to industry. Thirty years ago it might be possible to be brave enough to say that this or that principle would never be applicable, but the last twenty years have shown that it is rash to make such a statement, and that there cannot be any sharp division between pure science and industrial science. The two cover the same field or they overlap in such a way that there is a large area in common. Now, it is the aim of the Advisory Council to develop this class of research workers, and it is preparing to-day to encourage their training by giving studentships and fellowships to work in industrial establishments and in laboratories.

We have proceeded a certain distance with our programme in this respect. Indeed, we have gone very far, and according to some of those in authority we are rather in advance of their programme. But, we have carefully considered the question and we have taken action. I need not indicate what these are. Perhaps my colleague, Professor Ruttan, will touch upon some of these, but I want to say here (I don't want to overstep the limit I set myself), that as Chairman of this Council it will be my policy to keep in touch with this Association, to know what it wants and to try to keep in sympathy with its objects to the utmost of my capacity.

ENTERTAINING EMPLOYEES.

An example of "reel" efficiency is reported from the Sparks-Withington Company's plant at Jackson, Mich., where free noonday motion picture exhibitions are given for the employees. A good picture machine has been installed and after the workmen have emptied their buckets they enjoy high-class picture releases until a warning whistle tells them the afternoon workhour is near. Increased efficiency is the aim of the management in introducing this novelty. On Saturday afternoons the families of the workmen attend the shows.

EXTRA PROVINCIAL LICENSING AND REGISTRATION ACTS

By F. W. WEGENAST

In response to numerous inquiries the following memorandum has been prepared by Mr. F. W. Wegenast by way of showing the situation in the different Provinces as regards the licensing and registration of Dominion companies:

FOLLOWING the decision in John Deere Plow Company v. Wharton (1915), A.C. 330, in which the Extra Provincial License provisions of the British Columbia Act were held to be *ultra vires* as regards Dominion companies, several of the Provincial Legislatures passed enactments by way of endeavoring to square their law with that decision. In some of the provinces the Acts were allowed to stand as before, the provincial authorities contending that these Acts were valid and could be distinguished from the Act in question in the John Deere case.

Ontario.

The authorities in Ontario, having taken the position that their Act was valid, notwithstanding the John Deere case, a test action, Currie v. Harris Lithographing Company, Limited, was instituted to determine the question. In order to give the Government a voice in the conduct of the case another action, Attorney-General v. Harris Lithographing Company, Limited, was instituted by the Government, and was argued along with the other case before Mr. Justice Masten. These two cases are now standing for judgment, which, it is understood, will be handed down in September.

Quebec.

In Quebec Dominion companies were always expressly excepted from the operation of the Extra Provincial Licensing Act.

Nova Scotia.

The Province of Nova Scotia has for some years had an Act under which all companies which "do or carry on" business in the Province are required to register. The Act applies to local companies as well as foreign companies and those of other provinces and the Dominion. No fee is charged on registration, but companies once registered are required to pay certain annual fees. Until the decision in the John Deere case there was a provision in the Act incapacitating unregistered companies from maintaining actions. Following that decision the Act was amended by removing this provision for all companies.

New Brunswick.

The Province of New Brunswick in 1915, following the decision in the John Deere case, amended its Extra Provincial Licensing Act by changing the name of the imposition from a "license" to a "tax." The provisions penalizing and incapacitating unlicensed companies from appearing in the provincial courts were maintained. Arrangements had been made with the Government for a friendly test action, but in May, 1916, further amendments were made to the Act, removing the provision incapacitating companies from maintaining actions; whereupon the proposed test action was dropped.

Prince Edward Island.

The Province of Prince Edward Island in 1913 enacted a company registration Act similar to that in force in Nova Scotia at that time. This Act was repealed in 1915, because it was considered to be invalid as regards Dominion Companies under the decision in the John Deere case. There is at present in force an Act which requires companies carrying on business in the Province to pay certain fees, but the Act expressly provides that "nothing in this Act contained shall be construed or interpreted as prohibiting any company, partnership, firm or individual from carrying on business in this Province . . . by reason of the fact that such company, partnership, firm or individual may fail or neglect to file. . . ," etc.

Manitoba.

The Extra Provincial Licensing Act of Manitoba was consolidated in 1913 with the General Companies Act, being made Part IV. of that Act. The provision, generally speaking, is that all companies, including Dominion companies, now incorporated under legislation of the Province of Manitoba, are required to take out a license before carrying on business in the Province. Companies failing to comply with the Act are subject to heavy penalties, and are declared to be incapable of maintaining actions in the provincial courts.

The provincial authorities have maintained that the Act is valid, notwithstanding the John Deere decision. A test case, Davidson v. Great West Saddlery Company, Limited, has been instituted by friendly arrangement with the Government. The Provincial Court of Appeal, sustaining the decision of the trial judge, had held the provincial enactment to be valid as regards Dominion companies, the judges being equally divided in opinion. The case is being appealed to the Supreme Court of Canada, and will probably come on for hearing at the autumn sitting.

Saskatchewan.

The Province of Saskatchewan in June, 1915, amended its company legislation by merging the Foreign Companies Act in the General Companies Act, under which provincial companies are incorporated. The new Act requires all companies, both provincial and extra-provincial (including Dominion companies), to be "registered" before carrying on business in the Province. Companies having become registered are required to take out a "license" annually. Companies failing to comply with the Act are subject to heavy penalties, but are not expressly forbidden the use of the provincial courts.

The provincial authorities, having threatened to prosecute a number of companies for carrying on business without being registered or licensed, a number of test cases were instituted, R. v. Great West Saddlery Company, Limited; R. v. John Deere Plow Company, Limited, and Harmer v. The A. Macdonald Company, Limited. The first of these is a prosecution by the Attorney-General, the second is a prosecution by a private informer, and the third is an action by a shareholder for an injunction to restrain the company from carrying on business without having complied with the Act. These three cases were argued together before Mr. Justice Elwood, who held the Provincial Act to be valid. On appeal to the Supreme Court, *en banc*, this decision was sustained, Mr. Justice Newlands giving judgment for the whole court. From this judgment the parties are appealing to the

Supreme Court of Canada. The appeal will probably be heard at the autumn sittings of the Supreme Court.

Alberta.

In Alberta in 1915, following the John Deere decision, the Foreign Companies Ordinance was amended by expressly excepting Dominion companies from its operation. At the following session of the Legislature a "Corporations Taxation Act" was introduced, under which all companies "transacting" business in the Province, including those incorporated by the Province, were required to pay a "tax" of 20 cents on every thousand dollars of authorized capital, the maximum being $500. It was provided that the failure of any company to pay the tax might be pleaded as a defence to an action brought by the Company, and Registrars of Land Titles were directed to refuse to register any document of title for a company in default. The question of the validity of this Act as regards Dominion companies has not as yet been raised in the courts.

British Columbia.

No change has been made in the British Columbia Act since the decision in the John Deere Plow Company case, in which it was held that the Act was invalid as against Dominion companies.

UNITED STATES EXPORT RESTRICTIONS.

(*Published in Dept. of Commerce Reports, Aug. 6th, 1917.*)

The President of the United States has issued the following instructions to the Secretary of Commerce for the guidance of the Division of Export Licenses:

"First: That all shipments to those nations associated with the United States in the war are, until further instructions, to be licensed freely, without reservation, and without restriction, except iron and steel plates, pig iron, iron and steel scrap, and steel billets, for which licenses shall be granted only in case said articles are destined for actual war purposes or will directly contribute thereto.

"Second: Licenses will be granted for shipments of all iron and steel plates and structural shapes, and other articles properly included under these general headings, to those countries to whom licenses are being granted freely, under the following conditions only:—

"(1) The application for such license must be received by the Department of Commerce, Division of Export Licenses, Washington, D.C., on or before August 10, 1917.

"(2) Such articles shall be completely made up and manufactured on or before August 10, 1917.

"(3) Such license shall be valid, and shall indicate that it is valid, only in case such shipments are covered by railroad or ocean bill-of-lading dated on or before August 15, 1917.

"All previous instructions with respect to iron and steel products are hereby withdrawn and repealed."

Articles for Which Export Licenses are Required.

Export license is required at present for any article on the following list, which supersedes the list published in "Commerce Reports" for July 23:

Coal.

Coke.

Fuel oils, including lubricating oil; benzol; hand lantern oil; toluol; naphtha; benzine; red oil.

Kerosine and gasoline, including bunkers.

Food grains, flour and meal therefrom, including corn flour; barley; rice flour; rice; oatmeal and rolled oats.

Fodder and feeds, including oil cakes and oil-cake meal; malt; peanuts.

Meats and fats, including poultry; cottonseed oil; corn oil; copra; cocoanuts, desiccated; butter; fish, dried, canned, or fresh; grease, inedible or edible of animal or vegetable origin; linseed oil; lard; meats, all varieties; tinned milk; peanut oil and butter; rapeseed oil; tallow; tallow candles; stearic acid.

Pig iron.

Steel billets, including steel sheet bars; steel blooms; steel slabs.

Ship plates and structural shapes, including iron plates; I beams; mild steel plates; rolled steel plates; steel channels; steel angles; mild steel plates, ordinary tank quality; steel beams; steel plates, one-eighth of inch thick or heavier; steel sheets one-eighth inch thick or heavier are classified as steel plates; steel tees and zees; structural steel shapes; boiler plates; tank plates; steel doors; steel car frames; steel towers.

Scrap iron and scrap steel.

Ferromanganese.

Fertilizers, including cattle manure, shredded; nitrate of soda; poudrette; potato manure; potassium salts; land plaster; potash; cyanamide; phosphoric acid; phosphate rock; superphosphate; chlorate potash; bone meal; bone flour; ground bone; dried blood; ammonia and ammonia salts; acid phosphate; guano; humus; hardwood ashes; soot; sheep manure, pulverized; anhydrous ammonia.

Arms, ammunition, and explosives, including nitrate of potash; rosin; saltpeter; turpentine; ether; alcohol; sulphur; sulphuric acid and its salts; acetone; nitric acid and its salts; derivatives of benzol; phenol (carbolic acid) and its derivatives; derivatives of toluol; mercury and its salts; ammonia and its salts; glycerine; potash and its salts; all cyanides.

DESICCATION AND FOOD CONSERVATION.

In a recent number of the Chicago *Chemical Bulletin* of the American Chemical Society there appeared an interesting article on food desiccation which in part is quoted below:—

"The present disturbed conditions of the food markets, together with the widespread agitation for waste curtailment, are reflected in the great efforts that are being exacted to effect radical measures. One project which is receiving considerable attention is the desiccation of our excess crops. Desiccated foods are by no means unknown in this country. The various dried milk products, and dried egg, have been used extensively. Dried apples and apple waste, peaches, prunes, and other fruits may be classed as semi-desiccated, because of the considerable moisture remaining in the commercial articles. Fish products, dried oysters and clams have been on the market for years. However, the extensive desiccation of vegetables is a new product that will probably be given a thorough trial this year.

The commercial advantages of such desiccated products are their keeping qualities, their compactness, the saving in cost of transportation, the wide range of containers that may be used. This last item looms large, in view of the extreme shortage of tin plate. The relatively small bulk commends itself as a means of relieving the transportation problems. Viewed solely in the light of the moisture content of vegetables, it would be interesting to calculate the quantity of water that is transported about the country in the form of canned vegetables. Here the economic consideration would decide whether it was cheaper to evaporate the water than to can and transport it.

The public will have an opportunity of trying out a number of desiccated products if the plans of several corporations mature successfully. During the coming winter, the housewife may have the novel experience of preparing mashed potatoes by adding hot water to dried potato to the proper consistency; of making vegetable soup by adding hot water to dried soup stock and dried vegetables. To the enthusiast, the possibilities along this line are infinite and varied.

FIFTY YEARS OF EXPORT TRADE

How Canadian Manufactured Products are Being Shipped in Ever-Increasing Volume to Outside Markets

By WILLIAM LEWIS EDMONDS

THE outstanding feature of the export trade of Canada in manufactured goods during the first half century of Confederation is the extraordinary development which characterized it the last two years of that period.

Manufactured goods available for export being largely the surplus remaining after the requirements of the home market are satisfied, it naturally follows that at the dawn of Confederation Canada's potentialities in this respect were decidedly limited. True, there were in existence at that time most of the basic industries which the country now possesses. But when we say they had an existence it is about all we can say. It can scarcely be claimed that the ones which are now reckoned as our most important industries were at that time in a flourishing condition.

Notwithstanding that a hundred and thirty years had elapsed since cannon, mortars, bars, kettles and stoves were manufactured in Quebec under the Old Regime, the iron industry of the country at the time of Confederation was both small in stature and feeble in health; and was not, in fact, in a much better condition in either respect for about a quarter of a century afterwards. Woollen mills were pretty well scattered over different parts of the new Dominion, and here and there was a cotton mill. But neither industry, and particularly the latter, was of sufficiently outstanding importance to figure much in the export trade. Paper-making had been started in Ontario as early as 1846, two years anterior to that of cotton manufacturing, but it had not reached a state of development to qualify it to take care of the home trade, let alone cater to the export branch of the country's business. And that which applies to these applies with equal force to most other manufacturing industries that were in existence at that time.

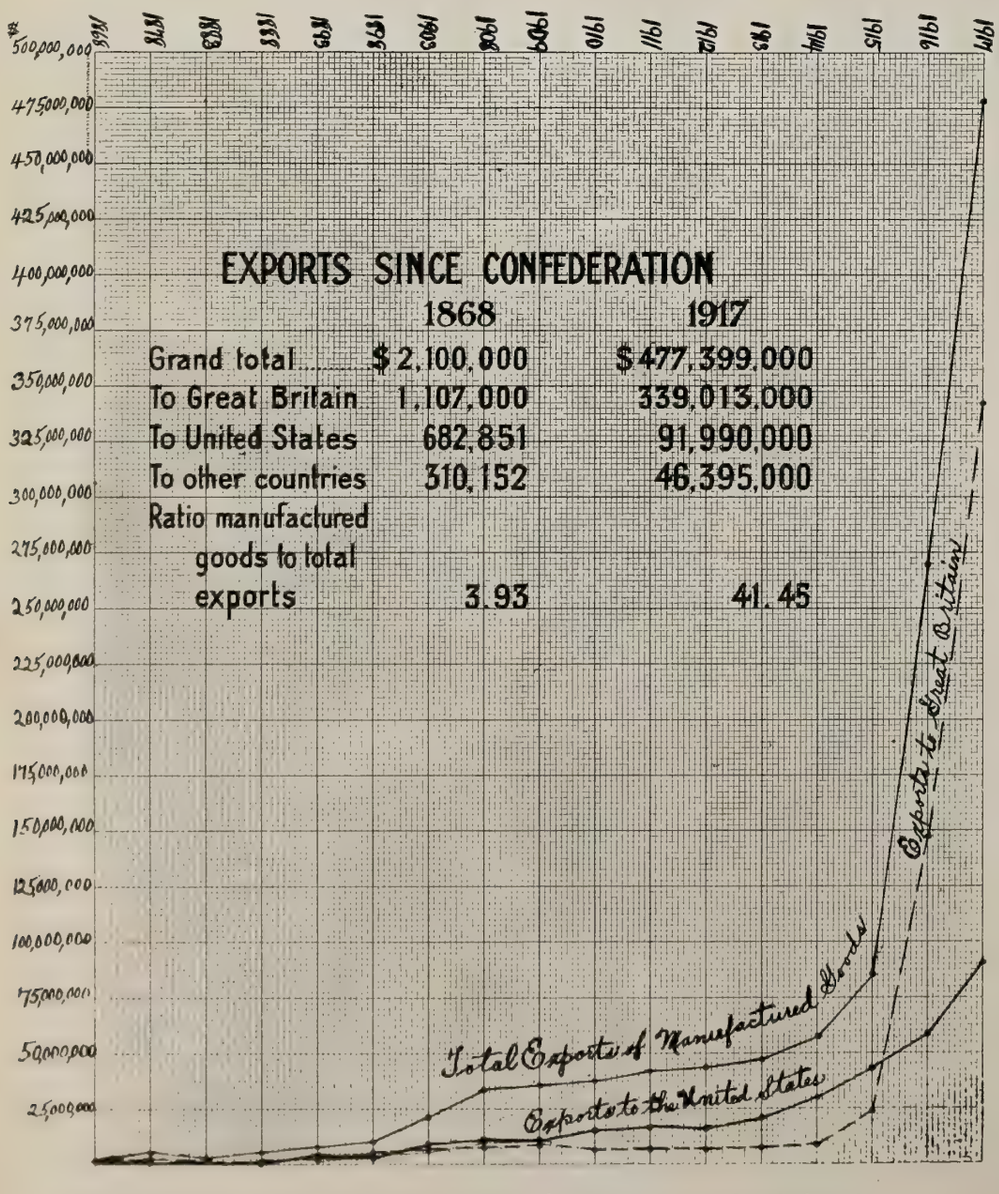


Chart illustrating growth of Canada's Exports since Confederation

It is not surprising, therefore, that at the close of the first year of Confederation the export trade in the country's manufactured goods only had a value of $2,100,000. Why, our exports of even whiskey alone run to about that figure to-day! And it was some years before it did much better. It was not until 1873 that the trade crossed the three million dollar mark. Three years later it managed to touch five millions. But that was a record mark for fourteen years. In 1879 the export trade in manufactured goods sank to $2,700,000, or only six hundred thousand dollars larger than it was eleven years before. And thereafter until 1889 it ran from a minimum of $2,824,000 to a maximum of $4,434,000. In 1890 a new record was established, the value of the exports that year being $5,741,000, or about six hundred thousand dollars above the previous record established in 1876.

But 1890 saw the turn in the tide. Nearly every year from that on recorded an increase, although it was not until eight years afterwards that the value of the export trade in manufactured goods was represented by eight figures, when it touched $10,678,000. By 1903 it had crossed the twenty million dollar mark, which by 1908 had increased to $28,507,000. In 1910 it was $31,494,000; 1911, $35,283,000; 1912, $35,836,000; 1913, $43,692,000, and in 1914, $57,443,000.

With the last given year died the old era as far as the export trade in manufactured goods was concerned. Nineteen fifteen gave birth to a new era, for in that year the export trade began to feel the stimulus which the war had created, the value of manu-

factured goods exported swelling to $85,539,000. But this was only a fraction of the development that was to follow, for by 1916 the value was $242,034,000, and by the end of the last fiscal year it was represented by the extraordinary figures of $477,399,000.

When one takes into consideration the fact that the value of the products of the factories of Canada exported during the fiftieth year of Confederation was approximately equal to those exported during the nineteen years between 1895 and 1914, and exceeded by about sixteen million dollars the aggregate value of the products of the farm, the factories, the mines, the forests and the fisheries exported at the no less remote period than 1914, the development that has taken place becomes all the more remarkable.

The accompanying table, showing the principal manufactured articles exported during the fiscal years 1868, 1914, and 1917, enables one to ascertain at a glance the extent to which the different manufacturing industries have participated in the increased trade, in the first place up to the outbreak of the war, and in the second place up to the end of the fiscal year ending March last. The line dealing with "cartridges and other explosives" gives one a pretty good conception of the extent to which the export trade in munitions has contributed to the swelling of the figures dealing with the total exports of manufactured products generally:

Summary of Principal Articles of Canadian Production Exported in 1868, 1914 and 1917.

	1868	1914	1917
Agricultural implements..	*	$7,219,520	$3,576,124
Carriages, automobiles, bicycles	$21,952	4,014,573	14,397,347
Clothing	*	446,524	6,356,750
Cottons	3,000	107,227	481,116
Chemicals, drugs, dyes, etc.	205,600	1,719,132	9,219,415
India rubber and manufactures of	9,270	686,231	2,666,506
Iron and steel and manufactures of	466,420	11,374,981	48,765,289
Leather and manufactures of	112,094	3,213,941	7,408,791
Metals and minerals:			
Aluminum in ingots, blocks, etc.	*	1,882,074	5,830,056
Asbestos	*	3,156,710	4,455,610
Copper, fine	394,220	9,489,729	22,744,825
Nickel	*	5,374,738	8,925,554
Musical instruments	5,529	282,707	232,936
Gasoline launches	*	9,545	15,149,926
Paints and varnishes	*	133,356	987,430
Paper of all kinds	*	12,686,896	26,123,015
Furniture	*	411,074	344,418
Wood pulp	*	6,364,824	6,448,189
Woollens	28,875	81,555	725,148
Lobsters, canned	*	2,983,987	3,639,332
Salmon, canned	45,765	6,631,437	6,288,257
Cheese	549,572	18,868,785	36,721,136
Bacon and hams	783,481	4,033,106	43,778,034
Canned meats	*	94,961	1,717,758
Canned fruits	*	394,719	430,970
Canned vegetables	*	17,655	5,597,053
Wheat flour	1,948,696	20,581,079	47,473,474
Oatmeal	*	488,589	535,318
Cereal foods	*	2,166,330	1,645,460
Cartridges and other explosives	*	241,665	281,220,270
Electric apparatus	*	106,816	1,357,824
Fertilizers	*	2,539,789	3,371,584

*Indicates not separately classified in 1868.

Although during the first twenty-five years of Confederation the export trade in manufactured goods made but slow development, yet in as far as it related to the total exports of all kinds of merchandise it steadily improved its proportion. At the close of 1868, the first fiscal year, the proportion that the exports of manufactured goods bore to the aggregate export trade was 3.93 per cent. The proportion at the close of each of the four subsequent ten-year periods was as follows: 1878, 6.07 per cent.; 1888, 5.11 per cent.; 1898, 7.33 per cent.; 1908, 11.13 per cent. From 1913 onward the proportion was as follows: 1913, 12.59; 1914, 13.30; 1915, 20.89; 1916, 32.63; 1917, 41.45 per cent. This showing reflects still more creditably upon the manufacturing industries of the country when we take into consideration the expansion of the home market, and particularly during the last half of the half century.

The fact that the manufacturers of the Dominion were able to steadily increase their proportion in the export trade during the half century, notwithstanding the increasing demands of the home market, was of course due to the expansion which took place in the manufacturing industry.

No figures are available showing the value of the output of the factories of the Dominion at the time of Confederation. The earliest figures are those contained in the census of 1871. They show that in 1870 the value was $221,617,773. Ten years later the value had increased to $309,676,068. In 1890 it was $368,696,723; in 1900 it was $481,053,375; and in 1910 it was $1,165,975,639. The most striking increases in the twenty-year period ending 1910 were: Metals and metal products other than steel, 452.69 per cent.; tobacco and its manufactures, 350 per cent.; vehicles for land transportation, 334 per cent.; iron and steel products, 298.24 per cent.; chemicals and allied products, 259.18 per cent.; paper and printing, 235.44 per cent.; food products, 223.42 per cent.; clay, glass and stone products, 152.90 per cent.; textiles, 148.25 per cent.; timber, lumber and their products, 153.62 per cent.; leather and its finished products, 157.04 per cent.

The postal census taken for 1915, although not yet complete, shows the value of the output of the factories of Canada in that year to have been $1,392,516,953. Even these incomplete figures show an increase of 93.85 per cent. over the postal census of 1905. A recent estimate places the value of the present annual output of the factories of Canada at approximately two billion dollars. This estimate, if approximately correct, means an increase of about 802 per cent. in the output of the factories of Canada since the first Dominion census of 1871 was taken.

Remarkable and all as this increase is, that which is more remarkable still is the increase of 22,631 per cent. in the exports of the factories of Canada in the forty-nine years from 1868 to 1917. Even up to 1914, the last fiscal year preceding the outbreak of the war, the increase from 1868 was 2,635 per cent.

The accompanying table, dealing with that particular phase of the trade, shows how the increase in the exports has been distributed between Great Britain, United States and other countries. By that table it will be noticed that whereas down to 1898 there was frequent alternating as to leadership in the value of exports to Great Britain and the United States respectively, there was thereafter down to 1915 a much larger trade every year with the latter than with the former. Nineteen sixteen, however, witnessed a marked reversal of the order. And in 1917 the exports of manufac-

tured products to Great Britain increased the preponderance to a still greater extent.

Distribution of Exports of Manufactured Goods from 1868 to 1908, and from Latter Year to 1917 Annually.

	To Great Britain.	To United States.	Other Countries.	Totals.
1868	$1,107,408	$682,851	$310,152	$2,100,411
1873	1,428,748	1,541,689	639,457	3,609,903
1878	2,224,373	983,027	920,335	4,127,755
1883	1,211,189	1,603,274	688,757	3,503,220
1888	1,762,894	1,632,025	766,363	4,161,282
1893	2,454,009	3,563,827	1,676,123	7,693,959
1898	4,900,806	2,829,510	2,948,000	10,678,316
1903	6,728,298	8,236,129	5,660,540	20,624,967
1908	7,472,357	12,427,258	8,607,509	28,507,124
1909	8,024,308	11,828,241	9,104,501	28,957,050
1910	6,610,756	15,350,280	9,533,880	31,494,916
1911	6,973,820	16,524,005	11,785,293	35,283,118
1912	6,852,710	16,312,751	12,670,823	35,836,284
1913	7,158,746	21,321,458	15,212,504	43,692,708
1914	8,583,540	30,391,764	18,468,148	57,443,425
1915	24,848,359	42,164,753	18,526,389	85,539,501
1916	148,477,303	58,202,141	35,355,554	242,034,998
1917	339,013,448	91,990,586	46,395,642	477,399,676

At the close of the first fiscal year following Confederation of the total exports in manufactured goods, the products of the factories of Canada, 52.72 per cent. went to Great Britain, 32.51 to the United States, and 14.76 per cent. to other countries. In 1888 the respective percentages were 42.36, 39.21, 18.41; in 1898, 45.41, 26.49, 27.03; in 1908, 26.51, 43.59, 30.19. By 1914 the proportion sent to Great Britain touched the low-water mark of 14.94 per cent., while that to the United States and other countries created the record of 52.90 and 32.50 per cent. respectively.

In 1915, when the war orders began to assert themselves, the proportion of manufactured goods on British account materially increased, mounting to 29.04 per cent. of the total, while that sent to the United States and other countries declined to 49.29 and 21.65 per cent. respectively. Nineteen sixteen again saw the proportion sent to Great Britain in the lead, with a percentage of 61.34, while that to the United States dropped to 24.46 per cent., and that to other countries 14.76, lower than at any of the periods referred to since Confederation, notwithstanding the very material increase in the totals in both instances.

But striking and all as the figures were in regard to the proportionate distribution of the exports of manufactured goods in 1916 as designated above, those for the fiscal year 1917 are still more so. To Great Britain the proportion was 71.01 per cent.; to the United States, 19.26 per cent., and to other countries, 9.71 per cent.

And the gratifying part of it all is that the increase in the proportion of the trade with Great Britain is not due to a decrease in the volume of business with either the United States or other countries. It merely means that the export trade on British account has grown much more rapidly than that in any other direction during the past two years.

In the two years the export trade in manufactured goods of Canadian production has grown from $24,848,000 to $339,013,000 on British account, from $42,164,000 to $91,990,000 on United States account, and from $18,526,000 to $46,395,000 on other countries account, whereas at the close of the Dominion's first fiscal year the figures were $1,107,000, $682,851 and $310,152 respectively. These are remarkable figures!

SOME PROBLEMS ARISING IN THE MANUFACTURE OF AMMUNITION.

By Chas. S. Palmer.

Mr. A. L. Humphrey, Vice-President and General Manager of the Westinghouse Air Brake Co., in a paper given before the Pittsburg Section of the American Chemical Society, said in part:

"War is no longer a question of men and resources and money, but one of a vast complex system of organization, of shops and mills, and every industry, of all skilled labor, of all executive intelligence, of all financial foresight and acumen; in short, war is a question of the ability to make use, effective use, of these men and resources and money in the minimum of time. A great process of education is now in progress. Europe is teaching us graphically, by moving pictures, as it were, what war in all its phases means to-day and how we must prepare to meet this terrible stress.

"However, recognizing these things, we are slowly becoming organized, as is evidenced by the appointment of the Advisory Commission of the Council of National Defence and by the active use by the Federal authorities of the great engineering and scientific societies.

"Careful organization is necessary in order to produce supplies abundantly and rapidly. In the manufacture of ammunition the specifications for the product must first be studied carefully by all the experts in the organization, and particularly by the chemist and metallurgist.

"The nature of the materials specified is of vital importance, first from the standpoint of availability and behavior of the market under increased demand, then from the chemical and physical properties, as well as from its 'workability' in the shop. Close co-operation between the chemist and engineer and the shop is highly essential.

"Another vital point is the question of tolerances or limits of precision permitted in the size and weight of the finished article.

"The planning and scheduling of every detail of the shop work follows the study of the specifications. To provide gauges, together with jigs and other special tools, is a problem. One hundred and seventy gauges are required in the manufacture of the combination time and percussion fuse alone for ¾-inch shrapnel.

"Suitable inspection is necessary at every stage of manufacture to check the chemical and physical properties of the product as well as the variations in dimension. A system of microscopic examination is used on cartridge cases.

"In the manufacture of the combination timing and percussion fuse great precision is required. The powder used in the powder train must have the correct burning time or the explosion will occur too soon or too late.

"It was impossible to obtain two powders with the same burning time, hence the burning time had to be determined on each lot of powder. The time for making this determination was cut down from 1½ hours to 5 minutes by development of a new method. These powders then had to be blended. Here again an improved method was devised, cutting the time of blending from 16 hours by the tumbling barrel method down to 15 minutes.

"In closing it can be stated as a general proposition that at every step in the progress, from raw material to the finished product, the co-operation of the chemist, the co-operation of your Society and of your fellows in the profession, is indispensable to modern manufacture, not only in the realm of munitions-making, but in every industry in the land."

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THE PERSONAL RELATION IN INDUSTRY

Some of the Basic Principles of the Colorado Industrial Plan

By JOHN D. ROCKEFELLER, Jr.

(Being Extracts from a Recent Address)

HERETOFORE the chief executives of important industrial corporations have been selected largely because of their capacity as organizers or financiers.

The time is rapidly coming, however, when the important qualification for such positions will be a man's ability to deal successfully and amicably with labor. I believe the personal relation in industry will eventually be regarded as an important part of those college courses which aim to fit men for business life.

After all, is it not the personal relations with one's fellows which, if when rightly entered into bring joy and inspiration into our lives and lead to success and which, if disregarded, bring equally sorrow and discouragement and lead to failure?

Industry in its earliest forms was as simple as it is complex to-day. The man who provided the capital was frequently the director, president, general manager and superintendent and in some instances actually worked with his employees. There was daily contact between employer and employee and naturally, if any questions or causes for complaint arose on either side, they were taken up at the next chance meeting and adjusted. Next came the partnership, a development necessary because more capital was required than a single individual cared to or was able to provide. With the development of transportation, the perfecting of the telegraph, cable and telephone, there came the need for larger aggregations of capital to carry on the ever-expanding industries. This led to the development of the corporation and this form of business has continued to grow as commerce and industry have become world-wide in their extent until we have to-day the United States Steel Corporation, with its 120,000 stockholders and its 260,000 employees.

Far-Distant Stockholders.

As we contrast this gigantic organization with the simple form of industrial organization first described, it is at once apparent that the man who supplies the money seldom if ever comes in contact with the man who supplies the labor. Frequently the industry in which the stockholder has invested his capital is located in a far distant city.

As a result of this lack of contact between labor and capital, the personal relationship has disappeared and gradually a great gulf has grown up between the two, which is ever widening.

The New York City street railroad strike last summer is estimated to have cost the companies some four millions of dollars, not to mention the loss in wages borne by the employees or the losses sustained by the public. Last summer 400,000 railroad men, constituting the four brotherhoods, voted in favor of a strike on 225 railroads. If the average pay of these men had been only $2.50 a day, which is considerably lower than the fact, such a strike would have meant a daily loss in wages of a million dollars, not taking into account the far greater loss to business and the inevitable inconvenience and distress which would have been brought to the doors of the entire population. The cost of the recent garment workers' strike in New York is estimated to have been in the neighborhood of fifty million dollars. The last anthracite coal strike in the course of five months caused a loss of one hundred and twenty million dollars to employers and employees.

Depleted Bank Accounts.

These figures do not include the terrible mental and moral losses growing out of struggle and conflict, nor do they take account of the depleted bank balances of the workers and the hunger, suffering and distress which extend into the homes and touch the lives not only of those immediately concerned but of tens of thousands of women and children.

What I have said leads me to advance two ideas, both of which I believe to be profoundly true, but which have received far too limited consideration.

The first is that labor and capital are naturally partners, not enemies.

The second, that the personal relation in industry, entered into in the right spirit, gives the greatest promise of bridging the yawning chasm which has opened up between employer and employee.

The mistaken point of view in regard to the relation between labor and capital exists on the part of both labor and capital, as well as among the interested and disinterested public.

Too often capital regards labor merely as a commodity to be bought and sold, while labor not infrequently regards capital as money personified in the soulless corporation.

Great Human Problem.

It might seem that technically speaking both of these definitions could be justified, but they are far from being comprehensive and adequate. For both labor and capital are men—men with muscle and men with money. Both are human beings and the industrial problem is a great human problem.

I cannot believe that labor and capital are necessary enemies. I cannot believe that the success of one must depend upon the failure or lack of success of the other. Far from being enemies, these two factors must necessarily be partners.

If labor and capital are partners, then they must have contact. This standing aloof one from the other must end.

Partners know each other, they rub elbows, sit around the same table, come to understand each other's point of view. Respect grows in the heart of each for the other, confidence is developed, and they come to realize that they are working with a common interest for a common result.

Personal Relation in Industry.

But this attitude, this relationship, is the personal relation in industry. Nothing else will take its place, nothing else will bridge the chasm of distrust and hatred.

It is the recognition of the brotherhood of man, of the principle of trying to put yourself in the other man's place, of endeavoring to see things from his point of view.

The employee in any corporation must form his opinion of the owners and directors of the corporation from the petty officer or foreman with whom he has personal contact. Too

often these men, not infrequently promoted from the ranks, become overbearing and arrogant in their treatment of those under them.

This very naturally is as irritating and unjust to the employee as it is distressing to the company, and it is at this point in ninety-nine cases out of a hundred where grievances arise.

Grievances of Employees.

The Colorado Industrial Plan has been so drawn as to guard against the exercise of arrogance or oppression, by providing various channels through which the employee with a grievance can at once secure a sympathetic and friendly hearing, carrying his difficulty to the president's ear, if necessary.

The foreman who knows that an arbitrary or unjust action on his part may be reviewed by his superior officers is very much more careful in his treatment of his men, always wanting to avoid having his decisions reversed.

If a slight scratch made on the finger with a rusty nail is immediately cleansed with an antiseptic wash, it heals at once. On the other hand, if the poison which has been introduced is allowed to remain, soon inflammation sets in, the disorder spreads, and serious menace to life may result.

And so it is with the petty grievance. If it is dealt with sympathetically and justly, immediately it is made known, peace, harmony and good will are readily maintained. On the other hand, if indifference is shown and lack of sympathy, the grievance is nursed and from it grows the industrial disorders which later become so acute and difficult to heal.

THE ELECTRIC FURNACE.

Rapid Growth in its Use for the Production of Steel.

The use of the electric iron and steel furnace has made exceptional progress under war conditions. When the demand for steel exceeds the supply, the junk piles are searched for available metal, the electric steel furnace experiences a boom because it is capable of making an excellent quality of steel from a comparatively poor quality of iron and steel scrap. As more and more careful conservation of natural resources becomes necessary, electrical processes steadily gain ground because of their greater economy in the use of raw materials.

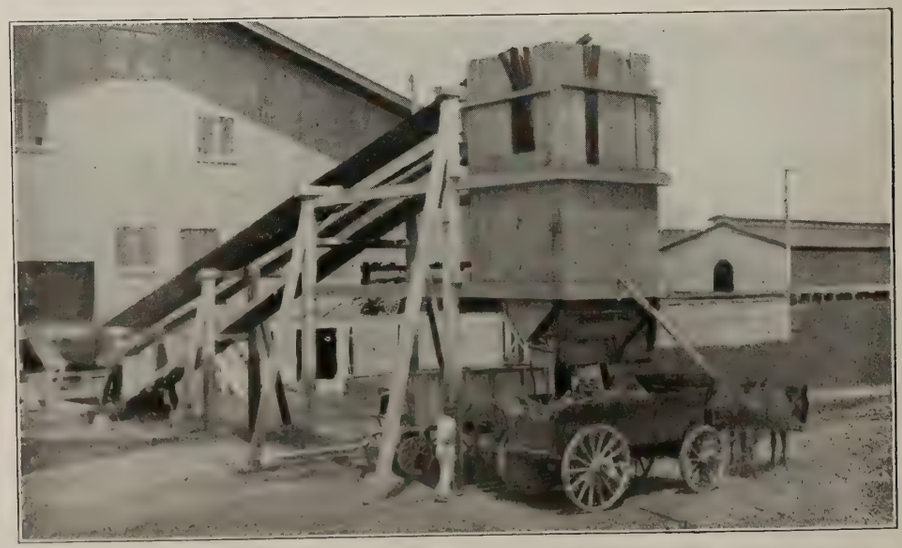
At the beginning of 1916 there were 73 electric steel furnaces in the United States producing 100,000 tons per year; to-day there are over double this number with a yearly production exceeding 1,000,000 tons. These furnaces require in the neighborhood of 150,000 h.p., one of the largest single installations having a total capacity of 70 tons in units of 15 and 20 tons.

The relative growth in Canada is even greater; the electric furnace steel production has increased from 61 tons in 1915 to 43,790 tons in 1916. In Montreal alone, according to figures supplied by the Civic Investment and Industrial Co., there are in operation, or being installed, 11 electric furnaces requiring a total of 17,000 h.p. The larger furnaces, when fed from high tension lines and properly controlled, offer no serious disturbances to their circuits, but a plant of less than 5,000 h.p. capacity should not attempt to carry single phase furnaces of 400 k.w. or over. The possibilities as an off-peak load are good as the usual length of heat is only about three hours, which condition would adapt itself excellently to a limited service operation. The furnaces can be operated economically at from 1c. to 1½c. per k.w.h. and such rates are now in force in many Canadian centres for ordinary service, such as house lighting.—*L.G.D.*

Which Plant Is Best Safeguarded Against a Disastrous Fire?



Would sparks, carried by an October gale to your mill find a lodging place like this awaiting them, with the same opportunity for flames to sweep under and through the entire building?



Or is the refuse disposed of as it accumulates—like this—leaving only clean, bare, well-painted and whitewashed surfaces?

The above illustrates the work which the Lumbermen's Underwriting Alliance of Kansas City, Mo., is doing along the lines of fire prevention—this being an Inter-insurance Association specializing on lumber manufacturing risks.

TRANSPORTATION

By J. E. WALSH

NEW CAR DEMURRAGE RULES.

The Board of Railway Commissioners for Canada have issued General Order 201 containing the new car demurrage rules applicable at points in Canada. These rules will take effect August 20th, 1917, and are as follows:

It is ordered that the rules hereinafter set forth shall be known as the "Canadian Car Demurrage Rules," superseding the "Canadian Car Service Rules" prescribed by the Order of the Board No. 906 (General Order No. 1), dated January 25th, 1906.

Rule 1. Cars Subject to These Rules.

Cars held for or by consignor or consignee for loading, unloading, forwarding directions, or for any other purpose.

Exceptions.

(*a*) Private cars (loaded or empty) on private tracks of the car owner.

(*b*) Empty private cars stored on carriers' or private tracks.

(*c*) Cars containing freight for transhipment to vessel, when moving on through bill of lading and held at railway terminal awaiting boat.

Rule 2. Notification.

(*a*) Notice shall be sent or given the consignee by the carriers' agent in writing, or as otherwise agreed to in writing by carrier and consignee, with all despatch after arrival of the car and billing; such notice to show the point of shipment, car initials and number and the contents, also the initials and number of the original car if transhipped in transit. If notice is mailed the consignee shall be held to have been notified at 7 o'clock a.m. following the date of mailing.

The carrier shall notify the consignee or his carter on application where his car has been placed for unloading. Any time within the free time allowance lost to the consignee by default of the carrier in giving such information shall be added to the free time allowance.

(*b*) Delivery of cars upon private sidings or industrial interchange tracks shall constitute notification thereof to the consignee. If such delivery cannot be made owing to such tracks being fully occupied, or from any other cause beyond the control of the carrier, written notice of readiness so to deliver shall be given and shall constitute notification to the consignee for the purposes of these rules, in which case the free time shall be computed from 7 o'clock a.m. of the first following day.

(*c*) In all cases where notice is required, by removing any part of the contents of the car the consignee shall be considered to have received such notice.

Rule 3. Free Time Allowance.

(*a*) Twenty-four hours (one day) after notice of arrival (exclusive of Sundays and legal holidays) shall be allowed for any or all of the following purposes, if necessary:

(1) For clearing customs.

(2) In the case of the consignees not served by private sidings or industrial interchange tracks, to give orders for special placement.

(3) For reconsignment or reshipment in same car.

(4) When cars are held in tranit for inspection or grading, or are stopped in transit to complete loading, to partly unload, or to partly unload and partly reload, when such privilege of stopping in transit is allowed in the tariffs of the carriers.

(*b*) If the twenty-four hours allowed for the above mentioned purposes are exceeded demurrage shall be charged.

(*c*) Forty-eight hours (two days) free time (exclusive of Sundays and legal holidays) shall be allowed for loading or unloading all commodities.

Exceptions.

(1) In the portion of Canada, Port Arthur and west, in which the "Canada Grain Act" applies, twenty-four hours free time only shall be allowed for loading grain.

(2) Five days free time shall be allowed at Montreal and at tide water ports for unloading lumber and hay for export.

(3) Manufacturers, lumbermen, miners, contractors and others, who have their own motive power and handle cars for themselves or others, shall be granted an additional allowance of the time necessary for them to do the switching from and to the designated interchange tracks, but not to exceed twenty-four hours.

Rule 4. Computing Time.

(*a*) On cars held for loading, time shall be computed from the first 7 a.m. after placement until loading is completed and proper billing instructions are furnished, except that on cars placed for loading grain at stations west of and including Port Arthur free time shall be computed under the provisions of "The Canada Grain Act."

(*b*) On cars held for disposal (see Rule 3-a), time shall be computed from the first 7 a.m. after the day on which notice of arrival is sent or given to the consignee.

(*c*) On cars held for unloading, time shall be computed from the first 7 a.m. following placement on public delivery tracks, provided notice of arrival has been sent or given to the consignee.

(*d*) On cars to be unloaded on private delivery tracks, time shall be computed from the first 7 a.m. after actual or constructive placement on such tracks.

(*e*) On cars to be loaded or unloaded on tracks of manufacturers, lumbermen, miners, contractors or others, who have their own motive power and handle cars for themselves or others, time shall be computed from the first 7 a.m. following actual or constructive placement on the interchange tracks until returned thereto. Cars returned loaded shall not be recorded released until billing instructions and other necessary data are furnished.

(*f*) When empty cars are placed for loading on orders and are not used, demurrage shall be charged from the first 7 a.m. after placement until released, without any free time allowance.

(*g*) When an empty foreign car is placed for loading via a specific route, so as to protect the ownership of the car according to the Car Service Rules, and when loaded is consigned by any other route, demurrage shall be charged until the car is unloaded and released, without any free time allowance.

(*h*) Time lost to the shipper or consignee through switching of cars, or through any other cause for which the railway company is responsible, shall be added to the free time allowance.

(*i*) In computing free time or demurrage time, Sundays and holidays shall be excluded. The exemption for holidays shall not include half holidays.

Rule 5. Weather Interference.

(*a*) If wet or inclement weather, according to local conditions, renders loading or unloading impracticable during business hours, or exposes the goods to damage, the free time allowance shall be extended so as to give the full free time of suitable weather. If, however, the cars are not loaded or unloaded within the first forty-eight hours of suitable weather no additional free time shall be allowed.

(*b*) Should bulk freight be so frozen in transit, or before placement, as to render unloading impossible within the prescribed free time, such additional time shall be granted as may be necessary.

Rule 6. Bunching.

(1) *Cars for loading.*—When, by reason of delay or irregularity of the carrier in filling orders, cars are bunched and placed for loading in accumulated numbers in excess of daily orders, the shipper shall be allowed such free time for loading as he would have been entitled to had the cars been placed for loading as ordered.

(2) *Cars for unloading or reconsigning.*—When, as the result of the act or neglect of any carrier, cars destined for one consignee, at one point, are bunched at originating point, in transit, or at destination, and are delivered by the line carrier in accumulated numbers in excess of daily shipments, the consignee shall be allowed such free time as he would have been entitled to had the cars been delivered in accordance with the daily rate of shipment.

Claims for refund of demurrage under this rule to be presented to the carrier's agent within fifteen days.

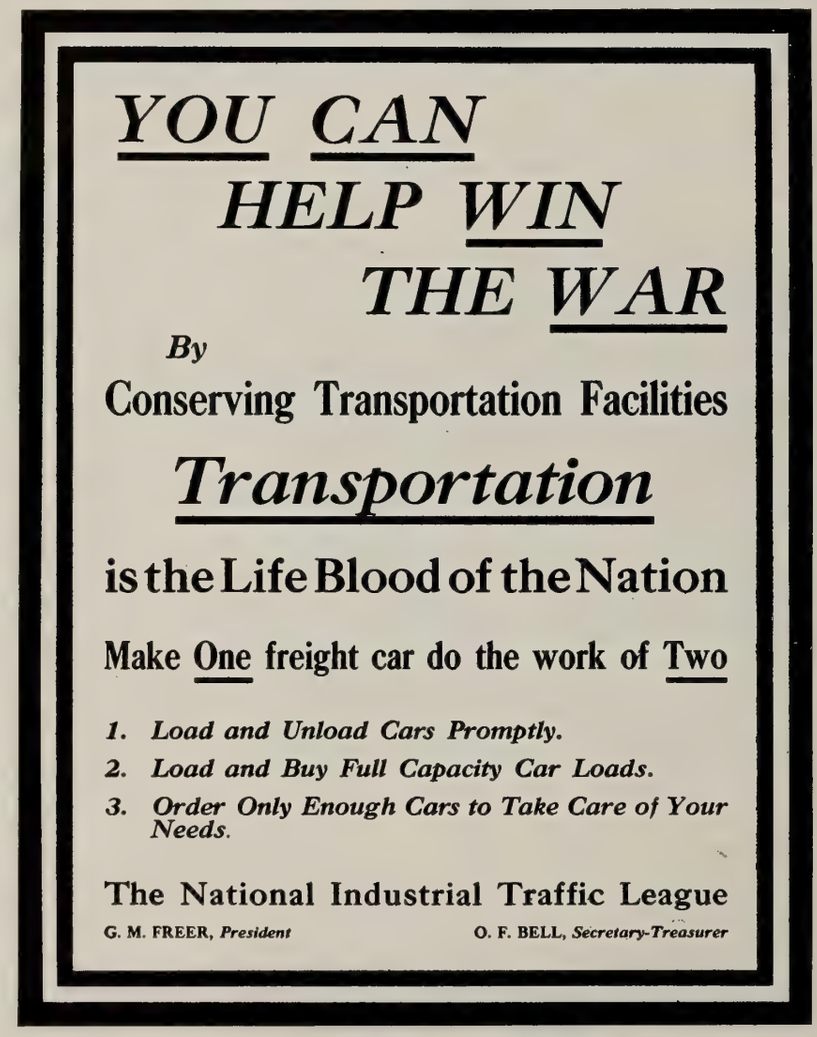
Rule 7. Placement.

(*a*) "Actual Placement" is made when a car is placed in a reasonably accessible position for loading or unloading.

(*b*) Delivery of cars to private sidings or industrial interchange tracks shall be considered to have been made when such cars have been placed thereon, or when they would have been so placed but for some condition for which the consignee is responsible. When cars cannot be so placed, the carrier shall notify the consignee in writing that he has been unable to deliver the cars because of the condition of the private siding or interchange tracks, or because of other conditions attributable to the consignee. This shall be considered "Constructive Placement."

Should the delivery require interswitching, the switching carrier shall notify the line carrier when for the aforesaid reason cars cannot be placed, and the latter shall furnish the former with particulars of cars ready for transfer (numbers and initials and points of shipment, contents and consignee, and if transhipped in transit the numbers and initials of the original cars). The switching carrier shall give this information to the consignee, with notification that the said cars are under constructive placement.

(*c*) When delivery cannot be made on specially designated public delivery tracks on account of such tracks being fully occupied, or from any other cause beyond the control of the carrier, the carrier shall send or give the consignee notice in writing, or as otherwise agreed to by carrier and consignee, of its intention to make delivery at the nearest point available to the consignee, naming the point. Such delivery shall be made, unless the consignee shall before delivery indicate a preferred available point, in which case the preferred delivery shall be made.



AN ARRESTING POSTER

With red, white and blue border, this appeal to shippers, sent out by the National Industrial Traffic League, carries an impressive message

Rule 8. Customs or Inspection Delays.

Demurrage shall not be collected from the consignee for any delays for which Government or railway officials may be responsible.

Rule 9. Demurrage Charge.

After the expiration of the free time allowed, the following charges shall be made until the car is released:
For the first day, or fraction thereof, of delay, One Dollar.
For the second day, or fraction thereof, of delay, Two Dollars.
For the third day, or fraction thereof, of delay, Three Dollars.
For the fourth day, or fraction thereof, of delay, Four Dollars.

For the fifth and each succeeding day, or fraction of a day. Five Dollars.

Rule 10. Non-Payment.

If payment of demurrage charges properly due on cars held on public delivery tracks be refused, delivery of only the car or cars on which such charges are due shall be withheld by means of sealing or locking, or by placing where such cars shall not be accessible.

If the owner or users of private tracks, or the owners of industrial tracks referred to in Rules 3 and 4, refuse to pay any charges which may already be due, delivery of cars to such sidings or tracks shall be suspended, and delivery shall be made on any available public team track until such charges have been paid.

Comment on the Foregoing.

The rules approved closely follow the national code of rules in effect in the United States as recommended to the Board by the representatives of the shippers, who attended the conference in Ottawa on July 5th last.

The free time is cut down on all commodities to 48 hours with an allowance of 24 hours for giving placing orders, payment of customs, etc. In this connection the Board of Railway Commissioners said conditions in Canada do not permit the adoption of this proposed rule (48 hours free time for all purposes). "While the Canadian Pacific can place cars on team tracks without first receiving any specific order, owing to the fact that their terminals are arranged in such a manner as to permit this, the Grand Trunk cannot." Further, "the 24 hours time now allowed, in my view, must be continued." "It is impracticable to have one rule for the Canadian Pacific and another rule for the Grand Trunk; and the general conditions forbid the adoption of the rule as submitted in Canada in this regard." The 24 hours additional free time is only allowed in the case of consignees not served by private sidings or industrial interchange tracks. In the latter case delivery is presumed to have been made when cars are placed upon the private siding or interchange track. Formerly there was some misunderstanding in regard to the time within which to pay customs charges. The Board has now made it clear that they must be paid within the first 24 hours after notice of arrival.

In the original proposition, as outlined in our Circular No. 136 of May 2nd, 1917, the Railways suggested Sundays and legal holidays be charged for after the expiration of the free time. The Board, in disallowing this, said "cars cannot be unloaded either on Sundays or on legal holidays. To include them in demurrage time is merely adding an extra penalty for an ordinary default. There can be no justification for it. Ordinary defaults will be covered fully by the scale of demurrage which I think ought to be adopted."

The new rules covering bunching and placement are practically the national demurrage rules in force in the United States. The new rule covering customs and inspection delays is a decided improvement and will remove friction between carriers and the public.

The railways suggested a charge of $3.00 per car per day for delays beyond the free time. The Board has taken a different view of this, as provided for in the code. These charges are temporary and will be revised when times become normal.

The applications for Average and Reciprocal Demurrage were again renewed. The Board considers that they should be left in abeyance until after the war. In regard to Average Demurrage the Board said "those asking for Average Demurrage recognized the difficulties of the present situation and thought that these abnormal times were perhaps not the best for the introduction of the scheme. In my view the Average Demurrage question might well stand on the same basis as the question of Reciprocal Demurrage, to be taken up after the war is over."

"In the meantime the Board will endeavour to ascertain whether the adoption of these plans have worked real benefit in places where they have been tried. From the best information that the Board had at previous hearings the contrary was the case. It may be that they are now working out well and if so and they can be made to work out in the interests of quicker movement under normal conditions, they of course ought to be adopted." The Judgment in the case was written by the Chairman, Sir Henry L. Drayton.

NEW "CLASS AND COMMODITY" TARIFFS BETWEEN POINTS IN EASTERN AND WESTERN CANADA—ALL RAIL.

Mr. G. C. Ransom, Chairman of the Canadian Freight Association, Montreal, has just issued tariffs Nos. 4 and 5. Tariff No. 4 names Class Rates, all rail, and Tariff No. 5 names Commodity Rates, all rail, applying *Between* points in Canada East of Port Arthur, including Buffalo, Black Rock and Suspension Bridge, N.Y., and Detroit, Mich., *And* points West thereof in Canada. These tariffs will take effect September 1st, 1917.

In view of the recent judgment of the Board of Railway Commissioners for Canada, in connection with the lake and rail rates, both Class and Commodity, as shown in Mr. Ransom's tariffs Nos. 2 and 3, the all-rail tariffs, Nos. 4 and 5, name rates which are in advance of those now in effect. These new tariffs supersede all tariffs applying between the territory hereinbefore mentioned issued by individual lines. The numbers of the C.P.R. issues are as follows:

E2472.....Class and commodity.
E2470.....Various commodity.
E2468.....Class.

The new class rates, as shown in tariff No. 4, will exceed those at present in effect by the following amounts:

1	2	3	4	5	6	7	8	10	....Classes.
6	3	3	3	2	1	1	1	1	....Cents per 100 lbs.

this being the same advance as was made in the lake and rail class rates.

The Commodity Rates, as shown in Tariff No. 5, are in many cases advanced over those now in effect. These advances vary according to the commodity, although they approximate those made in the class rates and are similar to those made in the lake and rail commodity rates.

The members will notice in examining Tariff No. 4, Class Rates, that it advances the present all rail class rates to Vancouver, Victoria and other Pacific Coast terminals. However, no advance is contemplated at the present time in the commodity rates to Vancouver, Victoria and other Pacific Coast terminals.

Mr. Ransom, is making a charge for these tariffs, this being a practice in connection with all tariffs published by him. Members desiring copies of these tariffs should, if they have not already received them, write Mr. Ransom, who will supply them with their requirements.

If interested members, after examining these issues, have any objections to offer, they should be submitted to the Secretary of the Board of Railway Commissioners for Canada, Ottawa, Ontario, as soon as possible, sending a copy of your letter to the Board to Mr. Ransom.

As the Board have already allowed advances in the lake and rail rates, any objections submitted should be backed up with detailed information substantiating same. The Transportation Department is, of course, at the disposal of any members desiring its assistance.

JUNE FIRE LOSSES.

Total Slightly Greater than in May and More than Double June, 1916.

According to estimates compiled by the *Monetary Times*, the fire loss throughout Canada during the month of June amounted to $1,184,627, as compared with $1,163,110 during May, and $494,557 during June, 1916. This brings the total fire loss for the first six months of the year to $9,644,714. The fire losses for the corresponding period of the three preceding years were as follows:—

1914	$13,496,894
1915	7,020,009
1916	10,106,517

ONTARIO INSURANCE COMMISSION.

Several Hearings in July, with an Adjournment until the Month of October.

The work of the Ontario Insurance Commission was resumed in July, and sittings were held in Hamilton, London, Toronto and Ottawa. Manufacturers and other insurance buyers in each city gave evidence as to the necessity for unrestricted competition and the undesirability of a tax on unlicensed premiums. The corporation of London suggested that in view of the numerous cases of difference between the C.F.U.A. and the assured, in regard to rates, a tribunal of appeal should be formed for the purpose of arbitrating such disputes. The investigation was again adjourned until October, when the Commission hopes to hear the arguments of the counsel representing various interests. After that the Commissioner may proceed to the United States for the purpose of comparing the various State insurance laws and inquiring into the results obtained therefrom.

LESSONS OF THE QUAKER OATS FIRE.

Several Important Deductions Made Following the Investigation into the Fire.

Mr. A. J. Mylrea, of the Sprinklered Risks Department of the C.F.U.A., draws the following conclusions from the results of the fire which occurred in Peterborough last year:

Once again the importance of isolating hazardous processes is emphasized, and it is suggested in order to secure a minimum damage from any possible explosion, a means for the explosion to vent itself be provided either by making the exterior walls of light curtain wall construction, or providing large plain glass areas. It would seem advisable also to locate control valves at a safe distance from the buildings where such hazardous processes are carried on.

If in any way it can be ascertained that the coke gases in the dry kiln room contributed to the intensity of the explosion, such methods of grain drying should be abandoned and some safer method such as steam drying be adopted.

The complete failure of the concrete building shows the necessity of providing automatic sprinkler protection wherever the contents of a building are combustible, irrespective of the construction of the building; and the folly of constructing an otherwise fire-resistive building and then leaving large unprotected openings, such as the bad hoist openings in the concrete warehouse, is demonstrated.

The value of being prepared to utilize the equipment of a neighboring fire department, even though the hose couplings had different threads, is demonstrated by the way in which Peterborough was enabled to use the services of the Lindsay fire brigade.

RECEIVING REBATES A PENAL OFFENCE.

New Insurance Act Makes Receiving as Well as Giving of Rebates Illegal.

Under the existing Dominion Insurance Act, it is a penal offence for any agent, broker, or other person representing, or doing business in Canada for any fire insurance company, licensed under the Act, to divide or offer to divide, directly or indirectly, his commission or other remuneration to any person whose property he may be insuring or seeking to insure, or to any person having, or claiming or appearing to have any influence or control as to the placing of such insurance, as an inducement to insure with him or in or with a company employing him or represented by him. Under the new Act this section has been revised, extending the penalty to any person as above described, receiving such rebate of commission or remuneration. The penalty in each case is double the amount of the full premium—not less than $100 for the first offence, or $250 for the second offence.

AN INTERESTING ATTEMPT.

An Effort to Ascertain Fire Insurance Costs is Being Made by an Actuarial Bureau in U.S.

A systematic effort is being made in the United States to compile a combined experience under a standard classification of occupancy hazards and a standard loss report form. Since January 1, 1915, the Actuarial Bureau of the National Board of Fire Underwriters has been engaged in the work of collecting the amounts of losses paid throughout the United States. The work was begun in response to the growing demand on the part of the insurance commissioners that the companies get together for the purpose of ascertaining the actual fire cost.

All companies, members of the National Board, report to the Bureau, and in addition 62 other stock companies, and 51 mutual companies or associations, making a total of 233 companies. Forty-nine clerks and machine operators are employed by the Bureau. The index or claimant fyles now contain over a million names.

The loss statistics are to be compiled to show the number of fires, insurance carried, loss paid, whole loss and sound value for each class, subdivided by construction and protection. The information is further subdivided for each cause, and also summarized for all causes, each state forming a unit.

While the claimant fyles contain much other valuable information, the main object of collating statistics as to amounts written and losses paid is the ascertainment of the loss cost. The value of the figures, as has been pointed out, is mainly dependent not only upon the accuracy and care with which class numbers are assigned, but also upon the care used by every company in seeing that all losses, both large and small, are reported. Losses of less than $100 form about 60 per cent. of the total, numerically, and also a large percentage of the total amount of loss.

The reports of amounts written, being made annually in a lump sum for each class by construction and protection, are undoubtedly accurate and complete, and it therefore becomes necessary that every loss be reported to the Bureau, as otherwise the figures will show an apparent low cost, with resultant misleading of the insurance companies, the State officials, and the insuring public.

The work of the Actuarial Bureau represents a sincere effort to compile statistics which will extend the lines of exact knowledge and tend to make fire insurance less of an art and more of an exact science.

While the statistical value of the record of amounts written and losses paid now being compiled by classes is undoubtedly great, it will probably take several years of careful revision of the classification lists, a finer analysis by degree of fire protection, before it will produce figures to govern rate making, aside from a few general classes made up of detached risks, such as dwellings, etc. The main thing, however, is that a start has been made under a system that is elastic.—*Bulletin.*

TARIFF

By J. R. K. BRISTOL

CUSTOMS DECISIONS.

Hard soap (not being whale oil soap or castile soap), when the fair market value thereof at the place of manufacture abroad is over 9c per pound wholesale, is ruled to be dutiable at 32½ per cent. general tariff, plus the war tariff, under tariff item 228. Hard soap valued up to 9c per pound is dutiable under tariff item 229 at one cent per pound, plus the war tariff.

Staves, or stave materials of wood, other than oak or poplar, listed or jointed and improved in condition, but not bevelled at the ends, declared to be dutiable under tariff item 711. Under this tariff item the general tariff rate is 17½ per cent. The item is also subject to the war tariff.

Fern leaves, per sample, not dyed or further prepared than dried, declared to be dutiable under tariff item 711.

Gold plate scrap, per sample, declared to be dutiable under tariff item 711.

Alloys of gold, in ingots, blocks, bars, drops, sheets, or plates, unmanufactured, when not less than 10 kt. fine, ruled free of duty under tariff item 359; and when below 10 kt. fine. ruled to be dutiable under tariff item 711.

Johnson's Carbon Remover, or Liquid Decarbonizer, ruled to be dutiable under tariff item 220-B, and exempt from the war tariff. Under this tariff item the rate of duty payable is 60 per cent., *ad valorem.*

Phosphate Rock, ground, but not further treated, ruled to be free of regular duty under tariff item 662. This item is also exempt from the war tariff.

Electrically welded steel tubing, per sample, costing 7c or over per pound, ruled to be entitled to entry under tariff item 396. Under this tariff item the rate of duty payable under the general tariff is 5 per cent., plus the war tariff of 7½ per cent. *ad valorem.*

SPECIAL INSTRUCTIONS.

The Commissioner of Customs has Issued the Following Special Customs Instructions to Collectors of Customs.

Beans of Asiatic or East Indian Origin.

"You are hereby instructed to withhold delivery of all East Indian or Oriental Beans, or beans of Asiatic or East Indian origin, pending receipt of report from the Inland Revenue authorities.

"Samples of such beans imported at your Port should be forwarded to the nearest Collector of Inland Revenue, for examination as to the quantity of prussic acid which they contain.

"The beans in question are not suitable for planting in this country, and are unfit for human food, since they yield hydrocyanic acid in amounts which may be dangerous to health."

Hides from Asia and Africa.

"Owing to the danger of infection being introduced into Canada by means of hides imported from Asia or from Africa, Collectors of Customs are directed to promptly notify by telegraph, the Veterinary Director General, Department of Agriculture, Ottawa, of the arrival at their ports of all consignments of such hides, giving the country of origin, name of importer and destination.

"The Veterinary Director General will cause the hides to be disinfected at point of destination.

"Importers must not be allowed to take delivery of such hides until permit or certificate for their delivery has been obtained from the Veterinary Director General."

Trading With the Enemy.

"The Proclamation of June 1, 1916, by which all persons and corporations, resident or carrying on business or being in the Dominion of Canada, were prohibited from trading with G. F. Schloetelborg, Seattle, Wash., U.S.A., has been revoked by a further Proclamation, dated June 8, 1917, and which was published in the *Canada Gazette* of the 7th instant."

VALUATION FOR DUTY.

Temporary regulations providing that not more than twenty-five per cent. shall be added to market value as at time of purchase by importer to represent market value for Customs duty purposes at time of exportation to Canada—notwithstanding any greater advance in value after purchase but prior to exportation.

Regulations in the above matter have been made and established by Order-in-Council as set forth below.

During the period of the war, until otherwise ordered, Customs duties on imported goods subject to an *ad valorem* rate may be accepted by Collectors of Customs in Canada at the fair market value of the goods at the time of purchase in the country whence exported directly to Canada, with an addition to such value of not more than twenty-five per centum

when imported within nine months from the date on which such goods have been contracted for or ordered to be shipped to Canada, notwithstanding any greater advance in the value of the goods prior to their exportation to Canada.

STRAITS SETTLEMENTS.

Licenses May be Issued for Importation of Motor Lorries, etc.

The Board of Trade, London, England, announce that the Straits Settlements may grant licenses for the importation of motor lorries and such like vehicles, including omnibuses and motor cars to be used exclusively as public conveyances.

VENEZUELA.

Rules Issued Regarding Plant and Material for Working Oil Deposits.

The *Gaceta Official* (Caracas), of 8th May, publishes the text of a contract between the Venezuelan "Ministerio de Fomento" and Francisco Ortin, of Maracaibo, for the working of petroleum, asphalt, etc., deposits in the Jaji Municipality, State of Merida, the Government leasing the deposits for a period of 25 years.

The issue of the *Gaceta* of 9th May contains the text of a similar contract with Doctor Rafael Cabrera Malo, of Caracas, for the working of oil deposits in the Antonio Diaz Municipality, in the Federal Territory of Delta-Amacuro.

The concessionaires must commence the working of the deposits within three years from the date of the approval of the contracts. They will be required to pay annually to the Government 1 bolivar (9s. 6d.) for each hectare leased, and 2 bolivars in respect of every metric ton of products produced.

All machinery, dredges, pipes, instruments and accessories, etc., imported from abroad for the working of the deposits, will be exempt from customs duties. The concessionaires will also have the right to establish railway connections, aerial ropeways, etc., and to construct wharves at the ports of shipment.

RUSSIA.

Government Proposals to Regulate the Export of Bristles After the War.

The Board of Trade are in receipt, through the Foreign Office, of information to the effect that the official *Trade Gazette* of Petrograd of the 7th to 20th May, organ of the Ministries of Finance and Commerce, announces that the Minister of Commerce, with a view to creating for the Russian export trade in bristles an independent position, and to dispense with needless intermediation, chiefly Leipzig, has submitted the following proposals to the Provisional Government:—

(a) To declare Petrograd the chief market for the export of bristles from Russia;

(b) To impose, on drawing up the new Customs Tariff, an export duty on raw bristles, this duty to be enforced after the war;

(c) To authorize the Petrograd Bourse to form a special Bristles Section, on the condition that the right of entry, as original members, should be limited exclusively to persons who, prior to the 1st/14th January, 1917, owned establishments for the dressing of bristles, and that the first original members should be chosen for a period of three months, further members being elected by ballot on the recommendation of two actual members. The export of dressed bristles shall, it is proposed, be allowed only by means of export licenses, issued by this Bristles Section, on the formation of the same, this procedure to continue in force for at least three years from the date of the signature of the Treaty of Peace.

The Provisional Government has confirmed the proposals of the Minister of Commerce; and presumably a Decree to give effect to the proposals will be issued in due course.

It is stated in the same authority that at present the Russian Government is granting licenses for the export of bristles from Russia. In this connection it is stated that such licenses are issued for *dressed*, not raw bristles.—*Board of Trade Journal, No.* 1074.

AUSTRALIAN INCOME TAX ACT, 1915.

Important Ruling Regarding Taxation of British Agents in the Commonwealth Income Tax.

The Acting Commissioner of Taxation in the Commonwealth of Australia has made the following statement in regard to the effect of the repeal of Section 15 of the Act:—

"Section 15 of the Income Tax Assessment Act, 1915, which dealt with the taxation of absentee principals through their Australian selling agents on 5 per cent. of the sales made, has been repealed as for the year ended 30th June, 1916, and subsequent years. There are, however, many absentee traders who, notwithstanding the repeal of Section 15, are still taxable under the Federal Law. If an absentee maintains a branch business in Australia which carries a stock, the principal is taxable on the profits from that business. Where there is not a branch office, but only a selling agent, in Australia, three questions are considered in determining whether the profits are liable to Federal tax, viz.:—

1. Whether the contract of sale is made in Australia.
2. Whether delivery of the goods is made in Australia.
3. Whether payment is made in Australia.

The contract of sale is made (*i.e.*, completed) where it is accepted. If it is accepted by the Australian agent the contract is made in Australia. The place of delivery can be decided by ascertaining where the goods were when the property in them passed to the purchaser. If they are shipped from the country of export at purchaser's risk, then delivery is made in the foreign country; if at the vendor's risk, delivery is made in Australia. Where any two of the three operations take place in the Commonwealth, a trade is exercised in Australia, and the profits therefrom are taxable. Agents should in all cases satisfy themselves as to their responsibility, if any, by communicating with the Taxation Department, Melbourne."

The decision of the Taxation Department upon which the above opinion of the Income Tax Commissioner rests has been embodied in Order No. 351, the text of which is as follows:—

Income Tax.

Absentees Selling Goods in Australia.

Residents Selling Goods Beyond Australia.

With regard to the general question whether an absentee is carrying on a trade or business in Australia, the Commonwealth practice will follow, to some extent, decisions given in the English Courts respecting the liability to British Income Tax of foreigners whose goods are sold in the United Kingdom.

In Grainger v. Gouch, Lord Davey said:—

"The foreign merchant exercises his trade where he makes his sales, and the profits come home to him."

and Lord Watson said:—

"No merchant exercises a trade beyond the limits of his own country so long as all contracts and deliveries are made

within these limits." "The question of whether money is paid in England or not is not necessary to be decided in this case." (Lord Esher in Werle v. Colquhoun.) "If it is, it is a strong circumstance, but it is not necessary to this fact, that a trade is carried on in England."

The three points to be decided are:—

(*a*) Place of contract, *i.e.*, location of the person who accepts the contract.
(*b*) Place of delivery, *i.e.*, location of the goods when the seller lost all right to the goods. If they are shipped at the purchaser's risk, the seller loses his right when the goods are placed on board ship.
(*c*) Place of payment, *i.e.*, whether made to the agent in the country of delivery or to the principal abroad.

It is not necessary, according to the judgments given, that all the three conditions mentioned should arise in Australia before a trade or business can be said to be carried on here.

Where an absentee maintains a branch office in Australia and sells goods from stock kept in Australia, there is no doubt as to the liability to tax on the profits of the business so carried on.

Where the contract of sale is made in Australia and the goods are delivered in Australia, a trade or business is being carried on here by the principals.

When a foreign merchant is held to carry on a trade in the Commonwealth the whole of the profits which accrue on the articles sold therein are assessable in Australia.

In arriving at the profit, the foreign principals should debit the Australia branch office or agency with "purchases" in the Australian Trading Account at the manufactured cost.

Such taxpayers should be questioned as to the basis of valuation of "purchases" from their head offices.

As regards absentees whose agents merely take orders and have nothing to do with delivery of or payment for the goods, there will be not tax assessable.

If the actual profit of such businesses is only obtainable by reference to the principal, a default assessment on the basis of 5 per cent. of sales may be made subject to adjustment upon production of details showing actual profit. Where details cannot be supplied, the Department must be prepared to consider an assessment on the most equitable lines possible.

With respect to persons in Australia making sales of goods to persons outside Australia, to which Section 23 is not applicable, queries as follows should be made, if exemption is claimed on the profits from the sales in question:—

(*a*) Do the agents abroad accept orders on their own authority, or refer them to the Australian office for acceptance?
(*b*) Are the goods shipped f.o.b. Australia at the purchaser's risk?
(*c*) Where is payment received?

If either contract or delivery, together with payment, is made in Australia, or contract and delivery are made here, a trade is exercised in Australia and the profits should be taxed in full as Australian.

WATER POWER TO SAVE COAL.

Reduction of Unnecessary Coal Consumption a National Problem.

Canada depends upon the United States for a large portion of her coal supply both for domestic and industrial purposes; she is therefore much interested in the coal conditions obtaining there. A recent communication from Secretary F. K. Lane, of the U. S. Department of the Interior, shows how acute the situation has been made by the entrance of our neighbors into the war. One of the remedies urged, particularly applicable to Canada, is the immediate conservation of fuel by the efficient use of all available water power. Elimination of unnecessary consumption of coal is considered a problem of national interest and of immediate concern. New power requirements should therefore be met, so far as practicable by utilization of hydro-electric energy; this would also apply to present steam generating energy consuming coal or oil in its production. Thus, all water available at water-power plants should be utilized to produce energy up to the capacity of the works and the requirements of the population and industries within transmission distance of the site; every facility should also be given for the efficient development of new sites. In regions where water-power can be made available, steam-power plants should be operated only to carry loads in excess of those that can be carried by water-power plants. The adoption of this course, in many cases, would mean cheaper operation, particularly in view of the rapidly increasing price of coal.

Every additional hydro-electric horse-power used in Canada means the yearly liberation of from 10 to 12 tons of coal for domestic heating or other purposes where hydro-electric energy cannot be so effectively substituted.—*L. G. D.*

TIRED WORKINGMEN.

"Don't overwork the husbands after they get home from a day of arduous toil in the factories," advises Dr. L. P. Kuhn, chief surgeon of the Illinois Manufacturers' Casualty Association.

"A man who has worked steadily all day in a plant is not in condition to work three or four hours longer about the house," said the doctor. "He needs his rest, that he may recuperate for next day. If his wife is inconsiderate enough to make him wash the dishes, clean the house or look after the children, she is impairing the efficiency of her husband and producing a state of fatigue which may result in some unfortunate accident the next day, for it is when a man is fatigued that accidents are most likely to occur."

THE BORDEAUX FAIR.

Second Annual Commercial Fair to be Held During First Half of September.

The second Commercial Fair of Bordeaux will take place on 1st September, 1917, and will last until 15th September. The buildings will be erected on the "Place des Quinconces," which covers more than thirty-six acres and is situated at the centre of the commercial activity of the town, near the Custom House, the Exchange and the banks.

All the stands will be located there. The buyers will thus be able to visit them easily and to find rapidly the goods they wish to buy. The Fair of 1916 has shown the real advantage of this organization; it was a success; the Fair of 1917 will be another.

The Port of Bordeaux, actively connected with England, North and South America, Africa and all French colonies, has always been a great market for colonial products; while the fertile valley of the Garonne is one of the most cultivated districts that is known. At the Bordeaux Fair will meet the merchants and manufacturers of French colonies, the farmers of the South of France, manufacturers and merchants of all countries. They know that they will find there a wonderful market for their products, and that they will come in touch with buyers they would never have known but for the Bordeaux Fair.

RETURN OF R. J. YOUNGE.

Manager of Export Association of Canada on His Way Back from South Africa.

The Association is advised by the Montreal office of the Export Association of Canada, Limited, that Mr. R. J. Younge, who has been visiting South Africa in the interests of the Export Association, sailed from Cape Town on the S.S. *City of Lahore*, and is expected to arrive at Boston towards the end of the month.

IMMENSE POTASH TRACT.

Correspondent in Western States Offers Participation in Interesting Proposition to Canadians.

A correspondent writes to the Association from California regarding a large tract of potash deposits in a neighboring state. This tract, he states, contains about 12,000 acres and shows potash deposits yielding throughout at least 8 per cent., K_2O, at a depth of not less than forty-two feet, aggregating upwards of 25,000,000 tons of potash, readily treated and easily washed. More than 2,500 samples have already been treated. The Association's correspondent states that he has been given the right to negotiate the sale of the property and, being a Canadian, he is naturally desirous of taking up the proposition first with Canadians. If any readers are interested, further particulars may be had by addressing a letter to the Secretary of the Association.

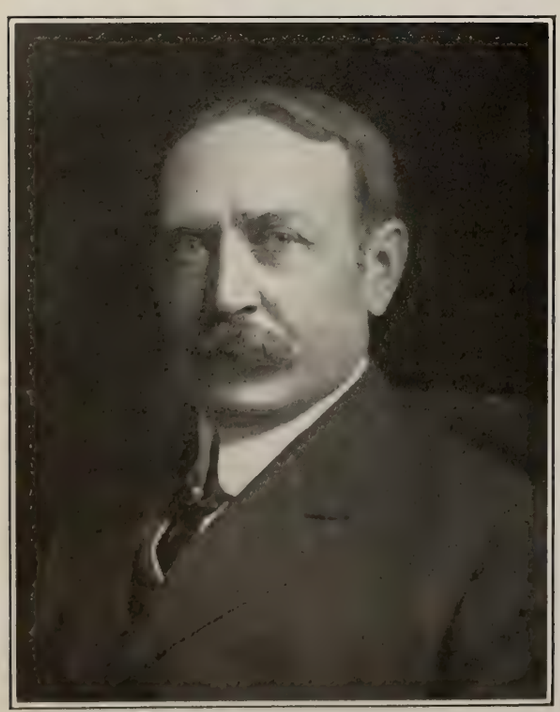
NEW INDUSTRY FOR CANADA.

Through the efforts of the officials of the Canada Stove & Foundry Co., Ltd., of Ville St. Laurent, Montreal, P.Q., that company has been successful in bringing a new industry to Canada. They have already built a large enamelling plant for the purpose of enamelling both steel and cast iron stoves, ranges or any kind of stove parts, and will also in the very near future have a full line of cast iron hollow-ware, druggists' enamelled sundries in any color, etc., to offer for sale. The manufacturing of these latter classes of goods will bring an entirely new industry to Canada.

They have secured the services of an expert enameller who has had twenty-five years' experience in all kinds of enamelware, and are in an excellent position to give prompt attention to any enquiries on the above mentioned class of goods.

The special grade of enamel which they are using is especially adapted for chemical work, and will successfully resist any kind of strong acids, and is so warranted.

They are making porcelain enamelled ice cream containers in sizes ranging from one to forty quarts. These containers are made of light cast iron porcelain enamel-lined so that they are guaranteed to be absolutely impervious to any chemical action caused by flavoring extracts, salt, etc., all of which objections are found in the sheet tin containers, which rust readily and result in the can becoming unsanitary, and allowing of the great possibility of dangerous results from tin oxide poisoning. Large orders have already been received from some of the leading ice cream and dairy supply dealers in Canada.



W. S. FISHER

President, Record Foundry Co., Sackville, N B.

Elected Chairman Maritime Provinces Branch, Canadian Manufacturers Association, 1917-18

SAVE THE RAGS.

Shortage of Wool Increases Demand for this Waste.

A serious shortage in wool exists. Almost all countries engaged in the war have taken over the wool supply to provide for soldiers' equipment, while the United States Council of National Defence recently took up with the clothing manufacturers the matter of the saving of cloth by eliminating from the 1918 styles patch pockets, flaring skirts, cuffs on coats and trousers, etc., and all unnecessary pleats and frills. The Council is also advocating the more general mixing of cotton with wool and the more extended use of shoddy.

For this reason the old-fashioned rag-bag should come into fashion. The day when rags were not of sufficient value to warrant much attention being paid to them is past. To-day there is a heavy demand for woollen rags. Scarcity of new wool has created an increased market for shoddy materials, of which woollen rags are the basis, and increased prices are being paid for this hitherto neglected material. *Save the rags.*

BELIEVES IN EXERCISE.

System, recently published, has an interesting article by Samuel M. Hastings, president of the Illinois Manufacturers' Association, entitled "Getting Two Days' Work Done in One." Mr. Hastings believes in plenty of exercise and in working hard while he works, but allowing the men under him to look after the numerous details. On the subject of exercise he says, and this is good advice for any manufacturer or business man:

"I put high importance upon the duty of keeping myself physically fit. I seldom permit myself to entertain the excuse: 'I am too busy to take exercise.' I take it anyway, and the renewed energy it gives me fully justifies my course. I take as much exercise as possible in the open air. When the weather is inclement, I go through systematic indoor exercise in company with a physical culturist.

"I consider it highly essential to maintain a reasonable equilibrium between work and play. I have set aside my regular time for some kind of play—golf, billiards, the theatre, the purely social function—all of which answers to me as a species of play."

Catalogues and Booklets

AIR COMPRESSORS.

A descriptive booklet on their Class "E.L.-1" air compressors has been published by the Canadian Ingersoll-Rand Company, Limited, of Montreal. These machines are designed for motor or belt drive, and are furnished with a special short belt drive where floor space is a consideration. They are intended for use in industrial and mining plants where units of 950 cu. ft. displacement and under per minute are required. Eighteen sizes are built, giving a wide range of choice. "Circo" leaf inlet and outlet valves and the dust-proof, self-oiling and self-contained construction of this type of compressor are fully described.

ARMY FIELD KITCHENS.

A booklet with a striking cover, descriptive of their line of army field kitchens, has been issued by the McClary Mfg. Co., London. The kitchen is approved by the British War Office and is supplied by the Canadian Militia Department to Canadian troops in training in Canada and England and on the firing line in Europe. It was also used by a number of regiments of the U. S. army during their campaign on the Mexican border in 1916-17 and is now in use by many units of the U.S. National Guard in their present training camps. The booklet gives a detailed illustrated description of the kitchen.

A CONSERVATION APPEAL.

Headed with the words "Help Us," in flaring red letters, five inches in height, the Rudd Paper Box Co., Limited, have issued a big black and red poster addressed to their employees. The help wanted is in the conservation of raw materials.

"All of our supplies now cost from two to three times the amounts we paid just over one year ago," states the company, which proceeds to specify the actual increases in the prices of various materials. "Will every one of our employees co-operate with us in our efforts to reduce our loss due to the wasting and spoiling of our raw materials."

AN ELEVATOR BRAKE MAGNET.

In general, elevators operating on alternating current are entirely dependent upon a friction braking mechanism for obtaining smooth and accurate stops. Failure of the brake may result in injury to passengers and damage to property. Such failure may be successfully guarded against by equipping the brake with a magnet. To meet such requirements the Canadian Westinghouse Company, Limited, Hamilton, is marketing a brake magnet which assures safe, positive and quiet action of the brake. All chatter and magnetic hum have been eliminated and immersion in oil is unnecessary.

This magnet, which is known as the type E, is designed for use with the parts regularly furnished by the elevator builder, and may be used for elevator motors operating on 220, 440 and 550 volt, 25 to 60 cycle, two and three phase circuits. The complete magnet is compact, durable, and very light, weighing only 70 pounds. It is installed by mounting directly over the brake wheel, the base being bolted against the machined gear case.

The operation of the magnet is as follows: When no current is flowing through the motor, the brakes are set, being held by a spring. When the motor is started, a portion of the current passes through the shunt magnet coils, energizing them, pulling down the brake armature. The travel of this armature, which is about ¼-inch at the point farthest from the bearing, gives a horizontal motion of 1-16-inch to each of the lower ends of the bell-cranks, compressing the springs and releasing the brake. When the current fails or is cut off, the armature is released and the brake applied by the springs. The recoil of the magnet armature is taken up by buffer springs, which may be adjusted to the proper compression. The pull of the magnet is 150 pounds on the lower ends of each of the bell-cranks, making a total of 300 pounds compression available.

THE "F. M. BOOK."

Even the best acquainted with the Canadian Fairbanks-Morse Company will be surprised at the very wide range of goods shown in their new general catalogue, which they have called the "F. M. Book." This book is a marvel of complete mechanical information condensed into a convenient size for easy reference. It contains 1,048 pages, and over 4,670 illustrations.

Twelve distinct departments are represented, each department covering a line of goods which is ordinarily considered a business in itself.

The Scale Department (52 pages) covers a full line of Fairbanks' Scales.

The Valve and Steam Goods Department (138 pages) contains 42 pages of Valves and 96 pages of Pipe, Fittings, Steam Specialties and Tools.

The Automobile Accessory Department (140 pages)—here you will find every practical accessory for automobiles (Ford and otherwise), besides a complete line of motor boat fittings.

Engine Department (16 pages) and Electrical Department (22 pages). These pages are merely an index of the various styles of Fairbanks-Morse oil and gasoline engines, electrical generators and motors.

Pump Department (62 pages)—Here is shown a very complete line of steam, power and hand pumps, duplex, triplex, and centrifugal, besides a number of pump accessories and windmills.

Machine and Tool Department (110 pages)—Nearly every type of machine tool is represented; among them some of the best known machine tools on the continent.

Wood-working Machinery Department (88 pages)—As fully representative as the machine tools.

Transmission Department (26 pages)—Every appliance for transmission of power through belts, ropes, chains, conveyers, etc., is here shown.

Railway and Contractors' Department (100 pages), containing railway track tools, motor cars, road machinery, trucks, etc., etc.

Supply Department (138 pages), representing a line of tools and supplies for equipping any factory.

Safe and Vault Department (26 pages), showing a line of high-grade fireproof safes and vault fronts.

In addition to all this is a 64-page section, printed on yellow paper, and containing besides an excellent index, a quantity of tabulated information most commonly used.

TARVIA ROADS.

As examples of what advertising booklets should be, the productions of the Erickson Company, New York, for the Barrett Company, are illuminating. Four booklets, "Tarvia," "How a Tarvia Macadam Roadway is Constructed," "Tarvia-B," and "Tarvia-X," have been received, each one of which possesses a pictorial interest apart altogether from the subject-matter. The two first-mentioned booklets are full of attractive views, illustrating the use of Tarvia in the building of roads. The last two show how roads may be preserved by the use of Tarvia products. Those interested in good catalogue work might well examine these booklets.

SUBSTITUTE FOR COAL.

Montreal Company Offers to Supply Hard Pitch Made from Coal Tar.

In connection with the fuel shortage which is confronting nearly all manufacturers in Canada, the Canadian Tar Products Company, Limited, Montreal, calls attention to the possibility of using a hard pitch made from coal tar. Under certain conditions this can be used to advantage mixed with other fuel. Pitch has a heating value above 16,000 B.T.U. per pound. It is practically ashless (the ash being usually less than one-quarter per cent.); it is low in sulphur and has no clinker forming properties even at a very high furnace temperature. It has the disadvantage of being high in volatile and therefore difficult to burn without smoke. It of course melts before it cokes, and therefore requires a fairly deep fire bed to prevent its running through the grates before it has a chance to coke. It is limited in quantity and forms a very small percentage of the fuel required.

The Canadian Tar Products Co. have about six or seven thousand tons of this hard pitch, which is available for fuel. Some has been sold for the purpose, and it has been used with success. The company are offering it at $7.00 per net ton of 2,000 lbs., f.o.b. their plant. If, they state, coal were cheap and abundant, they would not supply the material for the purpose, nor could they do so at the price quoted.

VALUABLE BUSINESS VOLUME.

Office Organization and Managament. By C. C. Parsons, Manager, Shaw-Walker Co., Chicago and New York. La Salle Extension University, Publishers.

The real experts in office management are few, and the publication of a book by one of them is an event of interest. "Office Organization and Management," by C. C. Parsons, just published, is a book that will appeal to many thousands of readers.

During the years 1904-1905, Mr. Parsons was connected with the Department of Commerce, University of Michigan, as special lecturer on the subject of business administration. The following year he was a special lecturer on the same subject at the Indianapolis Y. M. C. A. Commerce School. He lectured on the "Cost of Production" before the National Cloak and Suit Manufacturers' Association. As a writer, Mr. Parsons is known as the author of "Business Administration," and has been a contributor of numerous articles to magazines on the subject of business and office organization. For twelve years he has been a branch manager of the Shaw-Walker Company, filing devices and systems, Chicago and New York. He is now manager of the New York branch. By every test—education, lecture, and teaching experience, writing, business position, and experience, Mr. Parsons is pre-eminently qualified to write on office management.

"The successful organization of the present day is a complex affair. It is a well-done, finished compound that issues from the business caldron into which has been thrown such a diversity of ingredients as would have astonished the business man of an earlier generation."

That the author does not shrink from this complexity is shown by the list of chapter headings: Organization; Laying Out of the Office; Office Employees; Office Training; Rules and Regulations; Discipline; Methods of Payment; Promotions; Increasing Efficiency; Suggestions and Ideas; Esprit de Corps; Vacations; Encouragement of Savings; Making Employees Stockholders; Pension Systems; Welfare Work; Machinery of the Office; Records and Systems; Advertising Department Records; Sales Department Records; Credits and Collections Records; Order Department Records; Purchasing Records; Store Records; Shipping Records; Cost Accounting Records; Mailing Department; Supervising Office Work; Office Manager.

All these subjects are treated in the broadly human, common-sense spirit of the man who has wrestled with the problems and mastered them in actual practice. Few business texts succeed so well in bringing the atmosphere of the world of business into the classroom. The office manager, he says, "must have had that experience which gains for him a comprehension of the possibilities and limitations of humankind; for he is to deal not with one class of employees, but with the succeeding grades, from office boys, packers and shippers, up to the highest executive."

The book is published by La Salle Extension University, Chicago, and forms part of the material in its course on Business Administration.

TIME CLOCK IN FACTORY GARDEN.

Practically every foot of available land about the Firestone Tire & Rubber Company's factories at Akron, Ohio, is under cultivation, and more than 350 of its married employees are receiving instructions in intensive farming.

To insure the cultivation of every foot of ground, a time clock has been installed within the garden tract and each gardener must register a certain number of hours' work each week or forfeit his plot. The company furnishes the seeds and an expert gardener has been employed to instruct the men and insure maximum production. The gardeners choose their crops and the land is allotted according to the adaptability of the soil.

It is expected that sufficient potatoes, beans, cabbages and other garden crops to supply more than 350 families will be raised on the Firestone gardens.

CANADIAN COLLAPSIBLE TUBE CO., Limited
MANUFACTURERS OF
"Premier" Pure Tin, Plain and Decorated Collapsible Tubes
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Chemical Fire Engines
For Factory–Village–City. Capacities 20, 40, 50, 70 Gal.
OUR "JUNIOR" 40 GAL. ENGINE WITH MANY IMPROVEMENTS OVER THE ORDINARY TYPE, SELLS AT $150.00
The R. S. BICKLE COMPANY
WINNIPEG MONTREAL QUEBEC ADDRESS ENQUIRIES TO HEAD OFFICE, WOODSTOCK

Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

BRITISH COLUMBIA.

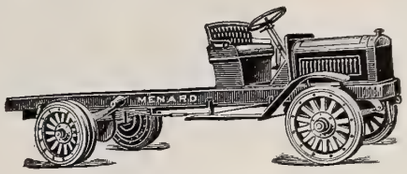
New Westminster.

Preliminary to building four of the wooden steamers ordered by the Imperial Munitions Board, the New Westminster Construction and Engineering Company, a recently incorporated company, is clearing the site for its shipyard on Poplar Island. Plans have been drawn for a bridge to connect the island with the mainland, running across the shallow channel from the foot of Third Ave., New Westminster. It will be a 46-foot pile structure, giving a 16-foot clearance above the water. Arrangements are also under way for piling a wharf for landing timbers and other material. The vessels which will be built will be 250 feet long by 44 feet beam, and will each contain over 1,500,000 feet of lumber.

An addition costing $18,000 will be made to the plant of the Dominion Products Company.

Prince Rupert.

Negotiations are now on with a view to the taking over of the G.T.P. shipbuilding plant in this city by the Union Iron Works, of San Francisco, for the construction of steel freight carriers.



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Menard Motor Truck
is
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Every owner of a MENARD
is a booster for the MENARD

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FOR SALE OR LEASE

FACTORY NO. 1:—Three stories, modern mill construction, floor space 15,000 sq. feet, light on all sides; adjacent to railway tracks, forge shop in rear, equipped with steam heating plant, elevator, wired for power and light. Suitable for metal working industry.

FACTORY NO. 2:—Two stories and basement, situated on railway siding; steam heating equipment, modern engine; wired for power and light, elevator, light on all sides; floor space 15,000 sq. feet. Has a large lumber shed and dry kilns adjoining. This building suitable for woodworking industry.

FACTORY NO. 3: — Two stories, floor space 11,000 sq. feet; steam heating equipment, elevator, wired for power and light; suitable for light manufacturing industry.

For further particulars, etc., apply
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BOARD OF TRADE
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Is Labor scarce, costly and unsettled? Our Manufacturers have been remarkably free from labor troubles, and have not had trouble in procuring labor of all classes. Peterborough is a City of home-owners, where living expense is low, Wages according.

Are freights too big an item with you? Peterborough offers

EXCELLENT TRANSPORTATION

The City is situated on the main highways of the C.P.R. and G.T.R., and connected by canals with Waterways. It is the centre of Canada's population, between Montreal and Toronto, thus enabling you to reduce mileage to the minimum for national distribution.



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There are over sixty factories in Peterborough to-day, the largest employing 2,000 hands. The City offers every encouragement to Manufacturers and is holding a number of choice sites alongside railways. For further particulars, write, telegraph or telephone to

The City Clerk, Peterborough
Ontario Canada

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FOR EVERY SERVICE

RECOGNIZED as the standard in conveying, elevating and power transmission work.



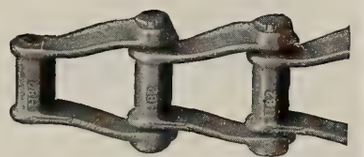
Ewart Detachable Link-Belt

Ewart Detachable Link-Belt

We were the first to introduce it to the public, and are to-day the largest manufacturers. Made in a wide variety of sizes. Extensive stocks insure prompt shipment.

"H" Class Link-Belt—Saw Mill Pintle Type

Riveted Link-Belt, with shapes of side bars and end bars designed particularly for sawmill work, having wide sliding surfaces.



"H" Class Saw Mill Pintle Link-Belt



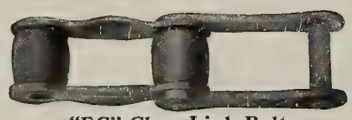
"900" Class Link-Belt

"900" Class Link-Belt

Has great strength and durability for elevator work and is especially designed to meet severe conditions. Joints formed by renewable case-hardened steel pins and bushings.

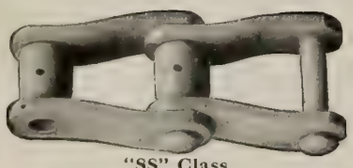
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Special Steel Bushed Roller Link-Belt, strong for the weight, suitable for moderately high speed drives. Ewart Link-Belt wheels.



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Designed to run on our standard



"SS" Class

Steel Link-Belt

Steel Link-Belt in different forms for various kinds of severe power transmission work. Styles, sizes and pitches adapted to individual requirements. Attachments in a variety of styles.

"HS" Class "Finished Steel" Link-Belt

High-grade, bushed steel roller Link-Belt used for moderately high speed transmission work. Furnished double, triple and quadruple as required.



"HS" Class Finished Steel

This trademark >——< on every link.

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Manufacturing Plant and Offices

CANADIAN LINK-BELT CO., LTD.

265 WEST WELLINGTON ST.
TORONTO

Sidney.

R. W. Bridge, of Strathcona, is making preparations for the establishment of a factory for the manufacture of potash from kelp at Sidney, Vancouver Island.

Vancouver.

Contracts will be let soon for extension for the Dominion Products, Limited, evaporator plant.

Montreal capitalists, including William Lyall, President, P. Lyall & Sons Construction Co.; H. W. Beauclerc and others, have acquired the wooden shipbuilding branch of the Wallace Shipbuilding Company here and will organize a company with a Dominion charter. Contracts have been closed with the Imperial Munitions Board for several vessels of the standardized 3,000 ton type, now being constructed on the coast, to be equipped with auxiliary Diesel engines. The vessels will cost approximately $400,000 each, and the company expects to turn out at least 10 this year. The property purchased from the Wallace Company includes three shipbuilding ways and three more will be constructed.

It is stated that a group of financiers propose to erect a $10,000,000 iron and steel plant with the necessary coking ovens, and also a shipbuilding plant, in the Province of British Columbia. According to Industrial Commissioner J. R. Davison, of Vancouver, there would be 3,000 men employed in such a plant, and as many more men in new mines to be opened for the supply of ores. The company would install blast furnaces and make ship plates.

Another shipyard company is closing a deal for a site near the Second Narrows on the Vancouver side of the harbor and the concern hopes to be in a position to employ 500



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WOOD
Turpentine

A very superior solvent and a high-grade diluent

Made in Canada from Canadian woods

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Sales Office at Portland, Maine

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men in a short time. The company has been registered as the Vancouver Shipyards & Engine Works, Limited, and is capitalized at $750,000. Contracts for the preliminary work have been let. Mr. S. Matheson is the representative here of the company, with offices in the Rogers Block. Orders are in hand for a number of wooden vessels and it is also expected to undertake the construction of steel vessels.

North Vancouver.

The North Shore Ironworks are making extensive alterations to their buildings and plant.

Victoria.

It is understood that Grant, Smith and Company, engineers and contractors, have under consideration the establishment of a shipyard in Victoria.

MANITOBA.

Winnipeg.

The Swift Canadian Company, Midwinter Street, will erect a $5,000 poultry house.

The plant of the Winnipeg Foundry Company, 115 Robinson Street, damaged by fire May 18th, will be rebuilt and equipment purchased.

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Solicitors of Patents
Counsel, Solicitors and Experts in
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Agencies in the leading countries of the World.
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T H-E

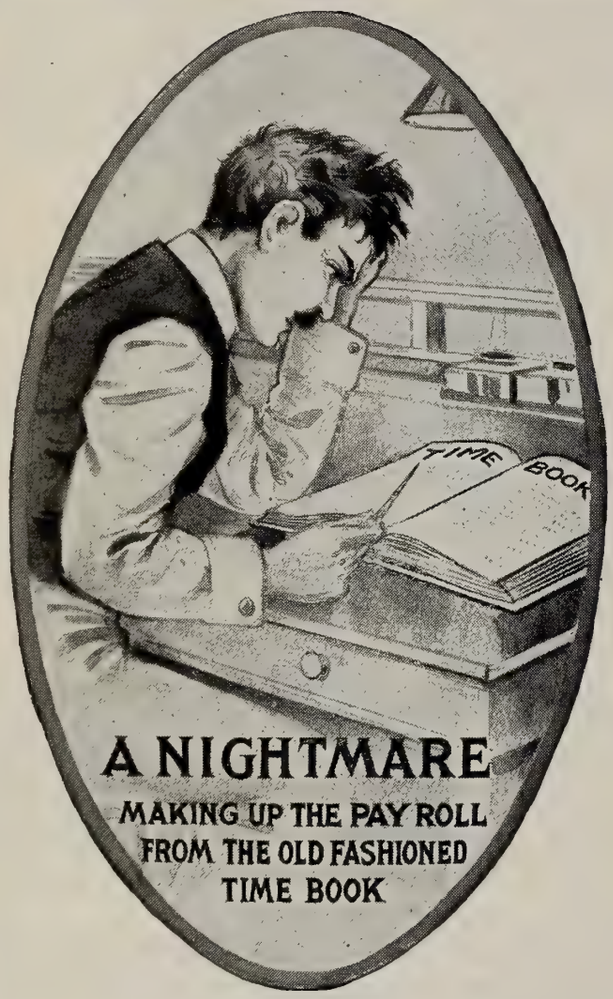
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Hydro can certainly save you money on your power bills—it is doing so for many others, why not for you? Of course, whether the saving be little or much remains to be seen, but it will cost you nothing and put you under no obligation to find out.

We are at the other end of your telephone wire.

Toronto Hydro-Electric System

226 Yonge St. Phone Adel. 2120



This man is guessing—

He's making up the pay-roll from the old-style time book.

He's worried because he knows there are mistakes—Some he'll be blamed for—Some he can "slide" from.

These mistakes will cost the firm money and the good will of its employees. But what is the cashier to do? He can't get machine-accuracy from a human time-keeper. He needs a machine for that.

INTERNATIONAL TIME RECORDERS

give you an absolutely impartial, printed, unchangeable, always legible pay-roll sheet. Each employer makes his own Time Record, so he is bound to be satisfied with it.

Don't guess. Don't let your cashier guess. Guessing costs money and YOU pay for the mistakes.

Let us send you our latest pamphlets and price lists.

Made in Canada, our product is Canadian product, Canadian labor, Canadian capital, and wherever possible made from Canadian materials.

The International Time Recording Co. of Canada, Ltd.

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WINNIPEG:
227-231 McDermott Avenue
VANCOUVER:
305 Birks Bldg. (Opposite C.P.R.)
MONTREAL:
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Every man his own time-keeper. Result: satisfaction.

This man KNOWS he's right

His pay-roll will represent the working time his firm has bought and is paying for—no more, no less.

This keeps down overhead expense. It keeps up production. It stimulates good will for the firm on the part of every employee who, in turn, KNOWS that ***his*** time record is right because he made it himself.

One more case of where a machine should be used instead of a human being—the time-keeper.



INTERNATIONAL TIME RECORDERS



A Modern Dial Card Recorder

No use trying to "sell yourself" that we are wrong, for if you succeed it costs you money, as proven by the thousands of successful firms who use International Time Recorders.

We invite you to give us an opportunity to suggest a pay-roll and cost-keeping system that will be modern and efficient and will exactly suit ***your*** business.

This suggestion will cost you nothing and obligate you to nothing.

Made in Canada our product is Canadian product, Canadian labor, Canadian capital, and wherever possible made from Canadian materials.

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Anderson St., TORONTO
F. E. MUTTON, General Manager
WINNIPEG: 227-231 McDermott Ave.
VANCOUVER: 305 Birks Bldg. (Opposite C.P.R.)
MONTREAL: Cartier Bldg., McGill and Notre Dame Sts.

INTERNATIONAL TIME SYSTEMS

A plant will probably be installed near here for treating lignite and converting it into fuel. The research council has asked the Federal Government for a $500,000 grant for this new department, and a portion of the grant will be for the construction of the coal-treating plant.

NOVA SCOTIA.

Amherst.

A recent fire in the International Engineering Works plant did damage estimated at between $75,000 and $100,000. The blaze originated in the pattern storage building and spread rapidly, completely destroying that structure. Other buildings were threatened, but escaped the conflagration.

Halifax.

Contracts have been awarded in connection with the erection of a $20,000 factory for the L'Air Liquide Society.

ONTARIO.

Belleville.

The Graham Company, Limited, are erecting a cold storage and warehouse at a cost of $100,000.

Brantford.

A permit has been issued to the Slingsby Manufacturing Company for the erection of a frame storage warehouse. Estimated cost $5,000.

Help Canada Maintain Her Financial Freedom!

We can carry our heavy war-debt if the bulk of the interest goes to Canadian investors, and so is used again in the country's development. But it will be a serious handicap if a large proportion of the interest has to be sent outside the Dominion.

Do your share towards financing the war with Canadian rather than outside capital. Save and invest every dollar you can in War Savings Certificates, on sale at every Bank and Money Order Post Office.

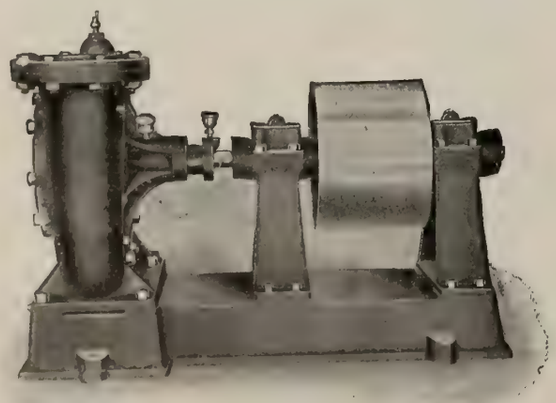
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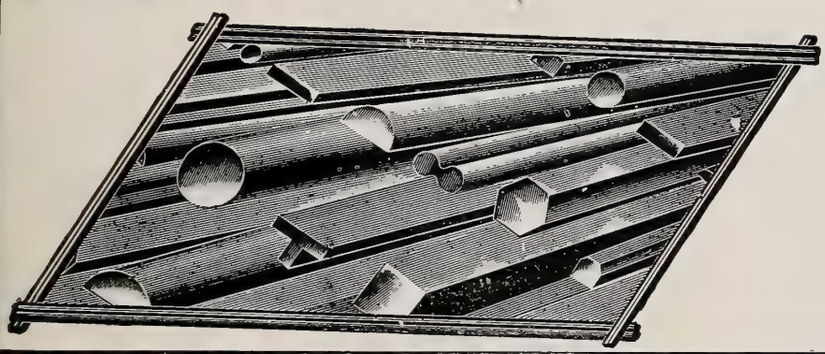
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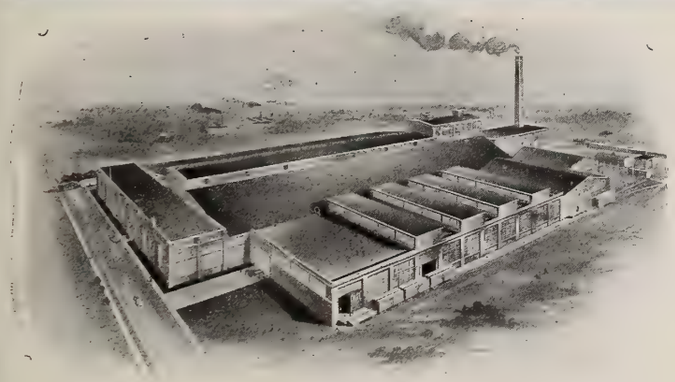
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FINISHED KEYS

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Reed Organs, Piano Stools,
Music Cabinets.

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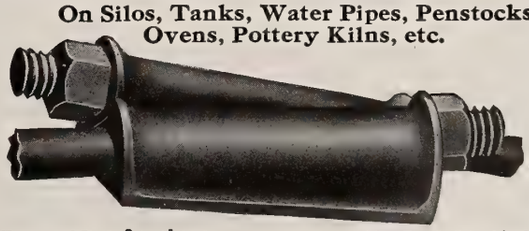
The Goderich Organ Co. Limited
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Closet Seats,
Flush Tanks,
Medicine Cabinets,
Everything for the Bathroom.

Write for Catalogue C and Price List.

LUGS FOR BANDS

On Silos, Tanks, Water Pipes, Penstocks
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For round Rods $\frac{5}{8}$ to $1\frac{1}{2}$ inch — Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

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Look at Your Files

Test the balance of them. See how hard they are. Run your finger over the teeth and note their sharpness and regularity.

These qualities of the "Famous Five" Files were not arrived at by accident.

They are the result of expert knowledge of the exact needs of every trade. This knowledge has helped us to standardize the merits of "Famous Five" Files in the minds of every user.

Specify them when ordering.

They are:



Chatham.

Contract has been awarded for a gray iron foundry for the International Harvester Company.

Dryden.

The Dryden Timber and Power Company propose to install a modern sprinkler system at a cost of about $9,000.

Durham.

The National Portland Cement Company have reorganized with the following new directorate: Hon. Dr. David Jamieson, President, Durham, Ont.; Gilbert McKechnie, Secretary-Treasurer, Durham, Ont.; R. H. McWilliams, Manager, Durham, Ont.; John E. Russell, Toronto; R. E. Hamilton, Grand Valley; N. Colville, Orono; E. A. Smith, St. Thomas; Wm. Calder, Durham, Ont.

Elmira.

The Machinery and Transmission Company will build an addition to its plant to cost $15,000. They will build a dry kiln and molding shop.

Gravenhurst.

The Potash Company, Limited, will install electric furnaces for the treatment of ore, using from 300 to 500 horsepower.

Hamilton.

Canadian Fasteners, Limited, plan erection of $20,000 concrete and brick factory building.

The Simet-Solvay Company, Syracuse, N.Y., may erect a two million dollar coke-gas plant in this city.

The Steel Company of Canada, in addition to the sheet metal plant it proposes erecting, will also arrange for a department for the production of steel plates for shipbuilding.

The Procter & Gamble Company, soap manufacturers, will build a brick addition to its plant to cost $25,000.

Contract has been awarded for a $10,000 addition to the Egg-O-Baking Powder Company.

The Hamilton Steel Wheel Company are building a $25,000 addition to their plant.

The National Steel Car Company has obtained an order for 1,000 freight cars for the Canadian Government Railways.

The Hamilton Steel Wheel Company will build an extension to their plant at a cost of $25,000.

Tenders will be called soon for the erection of a $20,000 concrete and brick factory building for the Canadian Fasteners, Limited.



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AIR
COMPRESSORS

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inquiries

HAMILTON MOTOR WORKS, LIMITED
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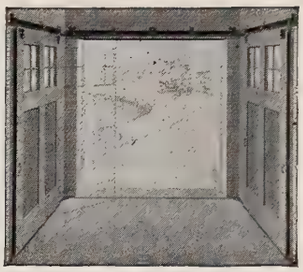
OUR XXX GENUINE ARCTIC METAL

cannot be surpassed for Extra Heavy Work.
It is a Tin Base Metal guaranteed to contain **no lead.**
We recommend it for its

QUALITY

It will reduce your babbitt expense. Try it.

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Garage Door Hardware of all kinds for any purpose



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CARRIER SYSTEMS
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Save Money on Your Factory Transportation



BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

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"R-W" Trolleys are best for all sliding doors

IMPERIAL GENUINE BABBITT METAL *The Highest Grade Manufactured*



Made specially for all HIGH SPEED, HEAVY ENGINES and EXTRAORDINARY HARD WORK

Manufactured and guaranteed to give excellent service by
THE CANADA METAL COMPANY, Limited, FRASER AVENUE TORONTO, Hamilton, Montreal Winnipeg, Vancouver



$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

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DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO, ONT. CANADA

Old Tyme Pure Maple Syrup

AND

Maple Butter

SOLD EVERYWHERE

Maples Limited

Manufacturers and Refiners

TORONTO *CANADA*

Kingston.

This City is granting permission to the Kingston Shipbuilding Company to extend its plant 75 feet further into the harbor. The company requested this concession on account of the big increase in shipbuilding operations. They point out that last fall the Department of Marine established a new wharf or headline for Kingston harbor, and that the new line will enable the company to extend its wharf.

Kitchener.

W. E. Woelfle Shoe Co., Limited, are building a $15,000 brick addition to their factory.

The Canadian Consolidated Rubber Company plans a $15,000 brick annex to machine shop.

The Perfect Knit Mill Company will erect a spinning mill at a cost of $25,000.

London.

The City Council decided to submit a by-law to guarantee the bonds of the Ajax Rubber Company of Canada, Limited, to the extent of $450,000. The company is to build a factory at a cost of more than $300,000.

John Cottam, 187 Ridout Street, contemplates remodelling building for factory, at a cost of $10,000.

London Art Woodwork Company, Limited, contemplate factory addition and boiler-house costing $15,000.

W. A. Jenkins, Ridout and King Streets, contemplate $20,000 factory addition.



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Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

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Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
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Agents for Baker & Adamson's Chemically Pure Acids and Chemicals

AGENTS FOR CANADIAN SALT CO.—"WINDSOR" BRAND CAUSTIC SODA & BLEACHING POWDER

DELANY & PETTIT, LIMITED

Joint and Veneer Glue

Always uniform.

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133 Jefferson Avenue,
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Special Woodworking

Garnet Paper and Cloth

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For many years this line has been the standard by which others are judged. A Tap has to be mighty good to be "nearly" as good as a Butterfield. But why experiment? Butterfield Taps — the Taps of known quality—are reasonable in first cost, and their absolute dependability makes them really the cheapest in the long run.

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We have experimented on the

SPECIAL SHELL STEEL

and have produced a HACK SAW BLADE that will give unequalled service on this material in HIGH-SPEED MACHINES

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"Maple Leaf" Brand Stitched Cotton Duck Belting

The best on the market for **Transmission of Power, Conveying, etc.** Also **"Maple Leaf" Belt Dressing,** which is unexcelled, and equally good for using on all kinds of belting.

WRITE US FOR PRICES

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HAMILTON, CANADA

Quebec Branch, 51 Duluth Building, Montreal

Mitchell.

An addition costing $30,000 will be made to the knitting factory of A. Burritt & Company, Logan Ave.

New Toronto.

Operations have commenced at the new plant erected by the Dupont Fabrikoid Company. The nine buildings, three of brick, and the others of sheet metal, cost $450,000.

Industrial expansion at New Toronto and the corresponding increase in the population has created an acute demand for housing accommodation, and, as a result, the manufacturers themselves are undertaking the erection of houses to accommodate their employees. Brown's Copper and Brass Rolling Mills, Limited, propose to erect 100 dwellings, to cost on an average about $2,000. This concern has already constructed 30 frame houses, each costing $1,500, but many more are required to supply the needs of their employees. Contractors also are busy on Ninth Street, where it is proposed to erect 40 residences.

Owen Sound.

Green & Woolrich have begun the construction of a new coal dock for the malleable iron plant. The new structure will be 80 feet wide by 200 feet long, and 200 piles will be driven.

A plant for the manufacture of wood screws is contemplated.

The Northern Bolt & Screw Company, 17th St E., contemplate the erection of a $300,000 factory.

633-661 EASTERN AVENUE



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QUALITY

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Vancouver, B.C.

Perth.

Caldwell, Boyd & Company, Limited, have awarded contract for an addition to their factory.

Henry K. Wampole & Company will erect a $10,000 factory.

Peterborough.

Factory is planned by the B. F. Ackerman Company.

Petrolea.

The Colonial Knitting Co., Elmira, contemplate erection of a knitting factory.

St. Catharines.

The Bonner-Heddie Company, Limited, contemplate erection of a factory building.

Sarnia.

H. Mueller Manufacturing Company, River Road, are having plans prepared for a $200,000 brass rolling mill.

Tilbury.

A new industry has been secured for this town. The company is capitalized at $250,000 and will manufacture porcelain goods for electric light supplies. They will erect a factory building estimated to cost $80,000.

Toronto.

Willys-Overland Limited, Weston Road, have had plans drawn for a brick and concrete factory building.

PAPER SITUATION

Let us give you ten reasons why prices will advance.

No doubt your stock of everything in Paper and Stationery is at a minimum, for there has been a general feeling that prices would drop. However, we have studied the situation very carefully and arrived at the conclusion that with all raw materials advancing right along—Wood costing nearly $20.00 per cord against $4.00 as in pre-war days and wages advanced 50%—there are certain to be further large advances. Be wise and take advantage of our large stocks or favor us with your enquiries. We are agents for American Mills making all Papers such as, Genuine Parchment, Glassine, Filter and Insulating Papers, formerly made in Germany, also we are Pioneers of Canadian-made Kraft Wrappings, the most economical wrapper. Get particulars of Waterproof Papers and our Tufenuf Twine Reinforced Waterproof Paper, which replaces Burlap for all purposes to advantage; Barrel Heads, Heavy Bags, Brattice Cloth for mines, etc.

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Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

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133 BOARD OF TRADE BUILDING - - MONTREAL

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The John Inglis Company have been granted a permit to erect a brick and tile machine shop on Strachan Ave., south of the G.T.R. tracks, at a cost of $45,000.

The Cooper Medicine Company, Dayton, Ohio, contemplate manufacturing in Toronto.

Contracts have been awarded in connection with the $110,000 factory for the Palmolive Company, Limited, 155 George Street.

A permit has been issued for the addition of wings to the factory building of the Booth-Coulter Copper and Brass Co., Limited, 115 Sumach St. The estimated cost is 6,500.

The British America Nickel Company, which company was planning to erect a $6,000,000 plant, has, in view of more important discoveries of nickel ore, decided to revise the programme and erect a larger plant than was originally contemplated.

The Alaska Bedding Company will build a $40,000 addition to their factory.

Last month the business of the General Fire Equipment Co., Limited, was taken over by the Bennett & Wright Co., Limited, and is now being operated as the fire protection department of that company. The business in the past was conducted largely under the same management as the Bennett & Wright Co., Limited.

Contract has been awarded for the erection of a factory at Niagara Falls, Ont., for the Herbert Morris Crane & Hoist Company, Toronto. Estimated cost is $50,000.

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The manufacturers in Eastern Canada have in prospect a greatly-increased demand in all the goods Eastern Canadians produce for Western Canadians.

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Automatic Fire Sprinkler System



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Correspondence Solicited

Windsor.

The Maxwell Motor Car Company is erecting a new factory with a floor area of 75,000 square feet. The building will be of reinforced concrete construction.

The Moloney Electric Company, Mercer Street, are erecting a $12,000 reinforced concrete and brick factory addition.

QUEBEC.

Chambly Canton.

Contracts have been awarded in connection with the erection of a $250,000 manufacturing plant for the Canadian Leatherboard Company.

Maisonneuve.

Lida Shoe Company, 889a La Salle Ave., contemplate erection of factory.

The National Shoe Co., Limited, plan erection of factory.

Montreal.

The Magnolia Metal Company, 225 St. Ambroise Street, contemplate factory.

The Imperial Tobacco Company, Limited, 900 St. Antoine Street, are making an extension to their factory. The estimated cost is $100,000.

The Dominion Oilcloth Company, 1192 St. Catherine Street, East, have awarded general contract for a $3,000 addition to their factory.

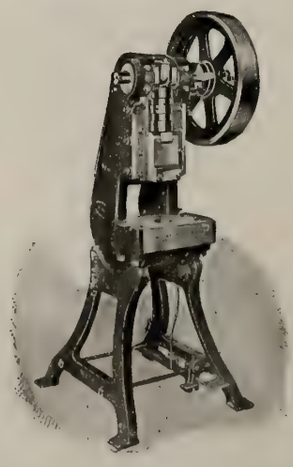
L. A. Gosselin, 6 Chenneville Street, will erect a $15,000 factory.

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ANNOUNCEMENT

The Business of

The General Fire Equipment Co., Limited,

was taken over on June 15th by

The Bennett & Wright Co.,
Limited

72 Queen St. East - Toronto

and will hereafter be known as their

FIRE PROTECTION DEPARTMENT

THE BENNETT & WRIGHT CO., Limited, will continue to use, in their installations, the

Manufacturers' Automatic Sprinklers

"The Head that Stood the Test"

The business of The General Fire Equipment Co., Limited, was conducted largely under the same management as THE BENNETT & WRIGHT CO., Limited, and we wish to assure our customers that their requirements will continue to receive prompt and careful attention.

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All sizes and styles.

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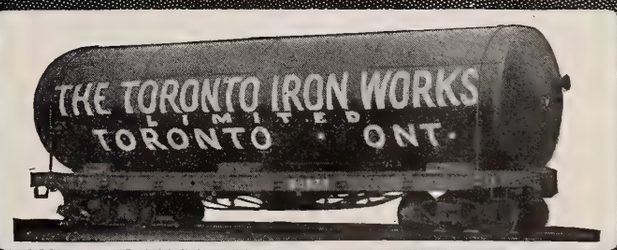
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The Hydraulic Machinery Co., Limited, have acquired as a going concern the business and property of the Canadian Boomer & Boschert Press Co., Limited. They will continue to build the full line of presses, pumps, accumulators, etc., as made by their predecessors.

St. Lambert.

The Dominion Textile Company, Limited, 112 St. James St., Montreal, will erect a textile plant.

Shawinigan Falls.

The Canadian Aloxite Company will erect factory buildings.

The Electric Products, Light and Power Company contemplates a $36,000 brick addition.

Sherbrooke.

The Canadian Ingersoll-Rand Company have awarded contracts in connection with a $15,000 machine shop.

W. E. Loomis, dealer in builders' supplies, etc., has acquired the property of the Eastern Townships Brick Co., and is changing and improving the methods of manufacture. He is installing new machinery to make wire cut plastic brick, land tile, vitrous building brick, high grade face brick in different colors, building blocks, etc.

Three Rivers.

The Three Rivers Shipyard Company plan to spend about $126,000 on a new yard.

IMPROVISING A DYE INDUSTRY.

Story of How a Coke-Making Concern in Milwaukee Found Treasure in Its Refuse.

With the development of famine conditions in our dye industries during the first year of the war came the question of what products we have in America which could be utilized for the manufacture of dyes, says *The Scientific American* in a recent issue. This problem has been put before the nation's chemists and to many of its phases answers have been found. Not the least interesting of these is one recently reported from Milwaukee.

A certain coke-making concern with headquarters there had been for years dumping into Lake Michigan its slag and other refuse, supposing this stuff to be quite worthless. It chanced that there resided in Milwaukee a dye chemist of wide experience in Germany and England. Well acquainted with the treasured secrets of the German dye-makers, he set himself the task of finding raw materials forming a potential basis for an American dye industry. The submarine coke dump came to his attention; and, in spite of the known fact that the dye bases of Germany and England were of different composition, he went to work on this material.

After considerable experimenting he succeeded in producing a dye from the slag. The possibilities were brought to the attention of the coke company's officials. While these gentlemen did not take the work very seriously, they were sufficiently interested to make arrangements for further experiments. A small quantity of dye was produced which compared favorably with the finest German colors. The experiments developed to greater proportions, until at length the company became enthusiastic, and gave the project full confidence.

A farm of 120 acres was purchased along the lake shore, about six miles south of Milwaukee. A fund of two millions was laid aside to finance the scheme, and building operations began on a large scale in January, 1916. Within the year fourteen large structures had been put up, and the payroll of the new dye works included several hundred men. Well-known chemists from near and far have been engaged to

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LIMITED

MANUFACTURERS OF

WHITE VICTORIA LAWNS

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and

DYED COTTONS

OF EVERY DESCRIPTION

give their services to the further development of the project so admirably begun; and the company officials, at first perhaps even more indifferent than the average business man to the claim that science can help out in the industries, have become red-hot advocates of the industrial research idea.

All of the chemical formulæ are withheld from patent and kept strictly secret, and in most of the company's buildings none but employees are allowed to enter. The success of the business lies in the distilling system, perfected at an expense of many thousands of dollars. To keep the plant running at full capacity three 8-hour shifts of chemists are employed to keep tabs on the finished product and on the raw materials which are fed by the coke factory to the dye factory—in addition to the regular staff of analytical men engaged in constant experiment. The large amount of refuse formerly dumped into the lake now goes in its entirety to the making of dyes.

That even yet there is plenty of room for improvement in the processes employed is indicated by the fact that each month the company's inspecting chemists reject thousands of pounds of finished dyes which fail to meet the standards imposed, either as regards solubility or with respect to melting point. No chances are taken; each run of the still is analyzed and tested as carefully as though it were the result of first experiments.

The dye comes from the stills in a molten mass, which is run off into pails and cooled until it crystallizes. It is then taken out of the pails in big chunks and packed in barrels. These contain about 360 pounds of dye, selling for an average of $1.25 a pound. The building up of such an industry, founded entirely upon preventable waste, is but an indication of what we may be able to do with proper scientific organization of our business.

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economiq Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOGRAPHIC REGISTER SYSTEMS
Business Systems, Ltd., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal. Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited. Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro. Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton. Ont.

*For Display Advertisement see Index, Page 543



By Royal Warrant

"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

Distilled and Bottled by

HIRAM WALKER & SONS
LIMITED

Walkerville, Canada

LONDON	CHICAGO	NEW YORK
MEXICO CITY	VICTORIA, B.C.	WINNIPEG

BRASS GOODS
*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*McGregor & McIntyre, Ltd., Toronto.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton. Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford. Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

CATALOGUE MAKERS
Grip, Ltd., Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto
Rolph & Clark. Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited. Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited. Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.

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CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.
CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,
COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
CORKS
S. H. Ewing & Sons, Montreal, Que.
CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.
CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.
CORSETS
Dominion Corset Co., Quebec, Que.
COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.
COTTONADES
Hamilton Cotton Co., Hamilton, Ont.
COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.
COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
CRANES
*Northern Crane Works, Walkerville, Ont.
CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.
CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.
CREAM SEPARATORS
The Renfrew Machinery Co., Ltd., Renfrew, Ont.
CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.
CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.
CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que
CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
CUPS, presentation
Standard Silver Co., Toronto.
CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.
CURLED HAIR
*Delany and Pettit, Ltd., Toronto.
CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.
CUTLERY
Standard Silver Co., Toronto.
CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.
DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
DESIGNERS
Ontario Engraving Co., Hamilton, Ont.
DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.
DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.
DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
DISINFECTING APPARATUS
Spramotor Co., London, Ont.
DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.
DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.
DRESSING, belt,
Sadler & Haworth, Montreal, Que.
DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.
DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.
DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.
DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.
DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.
DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.
DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.
DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.
DYNAMITE
Canadian Explosives, Limited, Montreal, Que.
DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.
ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.
ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.
ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.
ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.
ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.
ELECTROTYPING
Central Press Agency, Toronto.
ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.
ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.
ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.
ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.
ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.
ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
*Massey-Harris Co., Ltd., Toronto.
ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.
ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.
ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.
ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.
ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.
ENGRAVING
*J. L. Jones Engraving Company, Toronto.
ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited, Ottawa, Ont.
ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.
EXCELSIOR
*Delany & Pettit, Ltd., Toronto.
EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.
EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.
FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.
FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
FANS
*Sheldons, Limited, Galt, Ont.
FASTENERS, belt
*Sadler & Haworth, Montreal, Que.
FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited Montreal.
FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.
FENCING AND GATES, woven wire
*Canada Wire and Iron Goods Co., Hamilton, Ont.
FENCING, wire
C. H. Johnson & Sons, Limited. Montreal, Que.
FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.
FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.
FILES
Henry Disston & Sons, Limited. Toronto.
*The Nicholson File Co., Port Hope, Ont.
FILING CABINETS
*Office Specialty Co., Newmarket, Ont.
FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.
FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.
FIRE APPARATUS
*R. S. Bickle Co., Woodstock, Ont.
FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.
FIRE BRICK, JOINTLESS
*Beveridge Paper Co., Ltd., Montreal.
FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.
FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

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FIRE ENGINES
*R. S. Bickle Co., Woodstock, Ont.
Waterous Engine Works Co., Limited, Brantford, Ont.
FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.
FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.
FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.
FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.
FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.
FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.
FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.
FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.
FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.
FITTINGS, steam
Warden King, Ltd., Montreal, Que.
FLAGS
*Scythes & Co., Limited, Toronto.
FLASHLIGHTS
Canadian Carbon Co., Toronto.
FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.
FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.
FORGES
*Sheldons, Limited, Galt, Ont.
FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited. Hamilton, Ont.
FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.
FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.
FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.
FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
FUEL
Standard Fuel Co., Toronto.
FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.
FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.
FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.
FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.
FURNACES, oil burning
*Mechanical Engineering Works, Montreal, Que.
FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.
FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.
FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.
FUSES
*Economy Fuse and Mfg. Co., Montreal.
GALVANIZED IRON
*A. C. Leslie & Co., Montreal.
GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.
GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.
GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.
GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.
GASOLINE
*The Imperial Oil Co., Limited, Toronto.
GAUGES
*Brown Engineering Corporation, Toronto.
GEARS, cut
*Brown Engineering Corporation, Toronto.
*Hamilton Gear & Machine, Toronto.
*Winnipeg Gear & Engineering Co., Ltd., Winnipeg.
GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.
GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.
GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.
GLASSWARE, cut
Roden Bros., Ltd., Toronto.
GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.
GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.
GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.
GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.
GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.
GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.
GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.
GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.
GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.
GRATES
*The Goldie & McCulloch Co., Ltd., Galt. Ont.
GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.
GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.
GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.
GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.
GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.
GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.
GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro. Ont.
HACK SAW BLADES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HACK SAW FRAMES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HACK SAW MACHINES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
HAMS
F. W. Fearman Co., Ltd., Hamilton. Ont.
HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
HAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt. Ont.
HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.
HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.
HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.
HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.
HARNESS
Lamontagne Ltd., Montreal, Que.
HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.
HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.
HEADING SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.
HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt. Ont.
HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt. Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.
HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.
HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.
HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.
ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.
INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.
INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.
INSERTED TOOTH SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.
INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.
INVERTS
Standard Clay Products, Ltd., St. Johns, Que.
IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.
IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.
IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.
IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.
IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.
JAM, canned goods, etc.
E. D. Smith & Son, Limited.
JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.
JIGS AND TOOLS
*Brown Engineering Corporation, Toronto.
JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton. Ont.
JELLY POWDER
S. H. Ewing & Sons, Montreal. Que.
JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.
JEWELRY, gold-filled
Caron Bros., Montreal, Que.

*For Display Advertisement see Index, Page 543

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.

LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE KNIVES
*E. C. Atkins & Co., Inc., Hamilton, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPLE PRODUCTS
*Maples, Limited, Toronto.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*The Pedlar People Limited, Oshawa.

METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

METAL SHINGLES
*The Pedlar People Limited, Oshawa.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOTOR TRUCKS
*Menard Motor Truck Co., Ltd., Windsor, Ont.

MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

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OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.

OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.

PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.

PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.

PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.

PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.

PIPE AND NIPPLES black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTERING TROWELS
E. C. Atkins & Co., Inc., Hamilton, Ont.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.

PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.

PRESSES, baling and filter
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement see Index, Page 543

PRESSES, veneer
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.

PRINTERS
Rous & Mann, Ltd., Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PULP
*Brown Corporation, La Tuque, Que.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLL PRINTING
Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*The Pedlar People Limited, Oshawa.

SHEETS, galvanized
*Dominion Sheet Metal Co., Ltd., Hamilton.
*The Pedlar People Limited, Oshawa.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMELTER LINING
*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Ltd., Guelph, Ont.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

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SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.
SPRAYERS
Spramotor Co., London, Ont.
SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINGS, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.
SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.
STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.
STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.
STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.
STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STAMP MILLS
*Jenckes Machine Co., Sherbrooke.
STATIONERY, office
Harris Lithographing Co., Toronto.
STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.
STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.
STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.
STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.
STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*McGregor & McIntyre, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.
STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.
STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.
STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
STEEL SHELVING
*Dennis Wire & Iron Works Co., London.
STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.
STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.
STEREOTYPING
Central Press Agency, Toronto
STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.
STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
STONE
The Hagersville Contracting Co., Hagersville, Ont.
STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.
STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.
STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.
STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.
STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.
STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*McGregor & McIntyre, Ltd., Toronto.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.
SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.
TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.
TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.
TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.
TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.
TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,
TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.
TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.
TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.
TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.
TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.
TILING, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.
TIRES, bicycle, auto, carriage, truck, motorcycle
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.
TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.
TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.
TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.
TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.
TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.
TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.
TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.
TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.
TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.
TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.
TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.
TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.
TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.
TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.
TUBING, Fibre
*Beveridge Paper Co., Limited Montreal.
TUBING, gold and silver
Canadian Seamless Wire Co., Toronto
TUMBLERS, foundry
*Northern Crane Works, Limited Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
TURPENTINE
*Brown Corporation, La Tuque, Que.
TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.
TWEEDS
Rosamond Woollen Co., Almonte, Ont.
TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.
TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.
TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.
TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont
UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.
UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.
UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.
VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.
VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.
VALVES, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal, Que.
VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt
VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.
VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.
VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.
WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.
WASHERS
*The Steel Company of Canada, Limited, Hamilton.
WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.
WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.
WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.
WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto.
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

*For Display Advertisement see Index, Page 543

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.

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Oil Well Supply Co, Ltd., Petrolia. Ont.

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Lay Whip Co., Rock Island, Que.

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*Hiram Walker & Sons, Ltd., Walkerville, Ont.

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Coniagas Reduction Co., Ltd., St. Catharines, Ont

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Brandram-Henderson, Ltd., Montreal, Que.
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*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

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Daly & Morin, Montreal, Que.

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*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

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*Canada Wire & Iron Goods Co. Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

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*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

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C. H. Johnston & Sons, Ltd., Montreal, Que.

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*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
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*Northern Electric Co., Limited. Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

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*The B. Greeening Wire Co., Ltd, Hamilton.

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*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

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WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

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WOOD SPLIT PULLEYS
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*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

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Rosamond Woollen Co., Almonte, Ont.

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*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.

WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.

WROUGHT IRON PIPE
*The Steel Company of Canada. Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement see Index, Page 543

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Offices—Toronto General Trusts Building
59 Yonge Street

TORONTO
Canada

Vol. XVIII., No. 5 SEPTEMBER, 1917 $2.00 per Year

INDUSTRIAL CANADA

THE Ontario Government's Campaign for Harvesters (which was so liberally and so well supported by the Canadian Manufacturers Association) was prepared and placed by us under the direction of the Organization of Resources Committee.

We count it a privilege to have been selected to handle this advertising, and are glad to know, at this writing, that the Campaign is on the way to complete success.

J. J. GIBBONS, LIMITED

General Advertising Agents

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Cables—Gibjay, Toronto

TORONTO

WINNIPEG
Codes—ABC, 5th Edition

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TORONTO MONTREAL, HAMILTON, WINNIPEG, VANCOUVER, HALIFAX, QUEBEC

D. A. BREBNER LIMITED

(Producers of Coralox—an Electric Furnace Corundum)

AND

Manufacturers Corundum Co., Limited

(Producers of Natural Canadian Corundum)

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GENERAL STAMPINGS

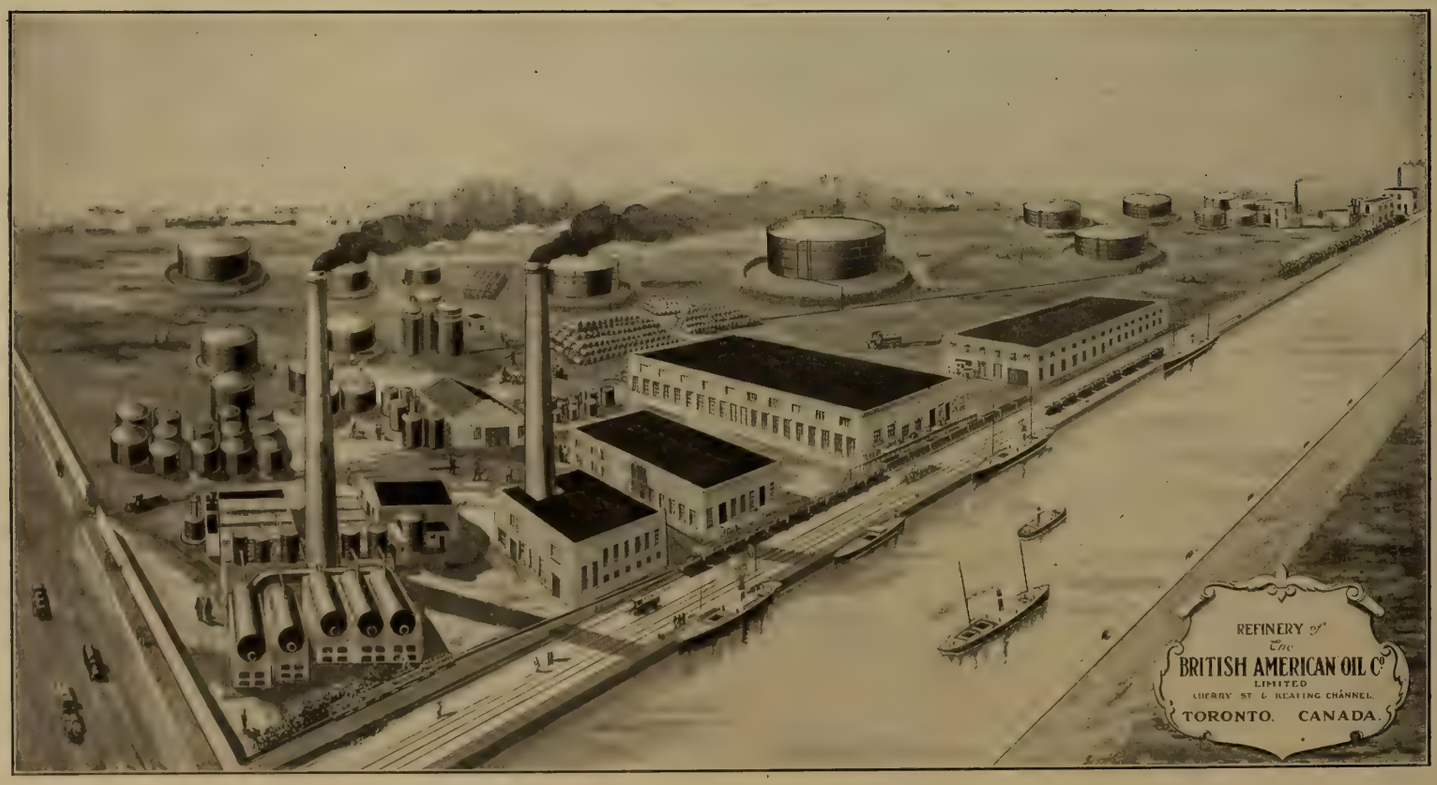
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We stand by our Motto: Quality and Service.

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both claiming it. The connection to their air line has to be moved frequently, and each man is responsible for his connection.

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DART UNION CO., Ltd., Toronto

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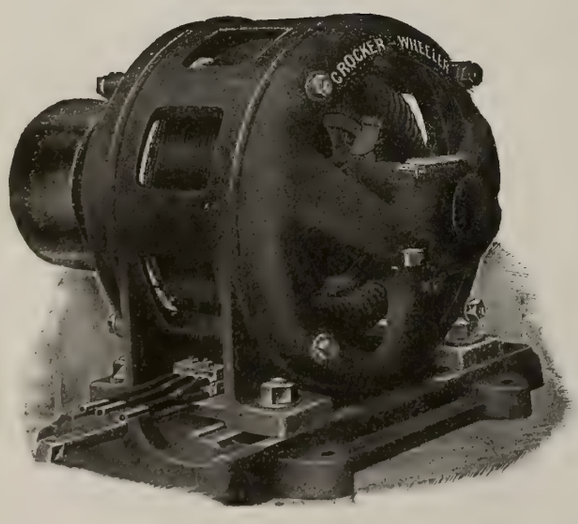
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They have many other desirable features; Bulletin 155 describes them.

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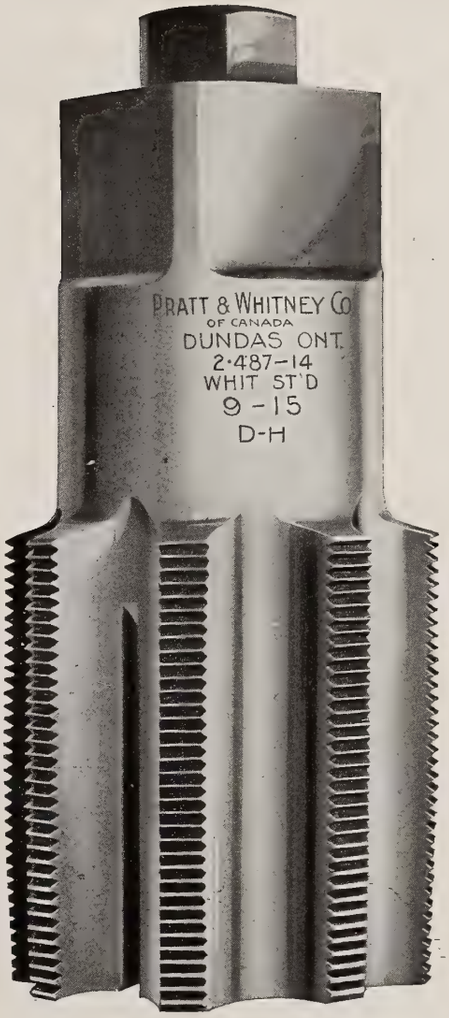
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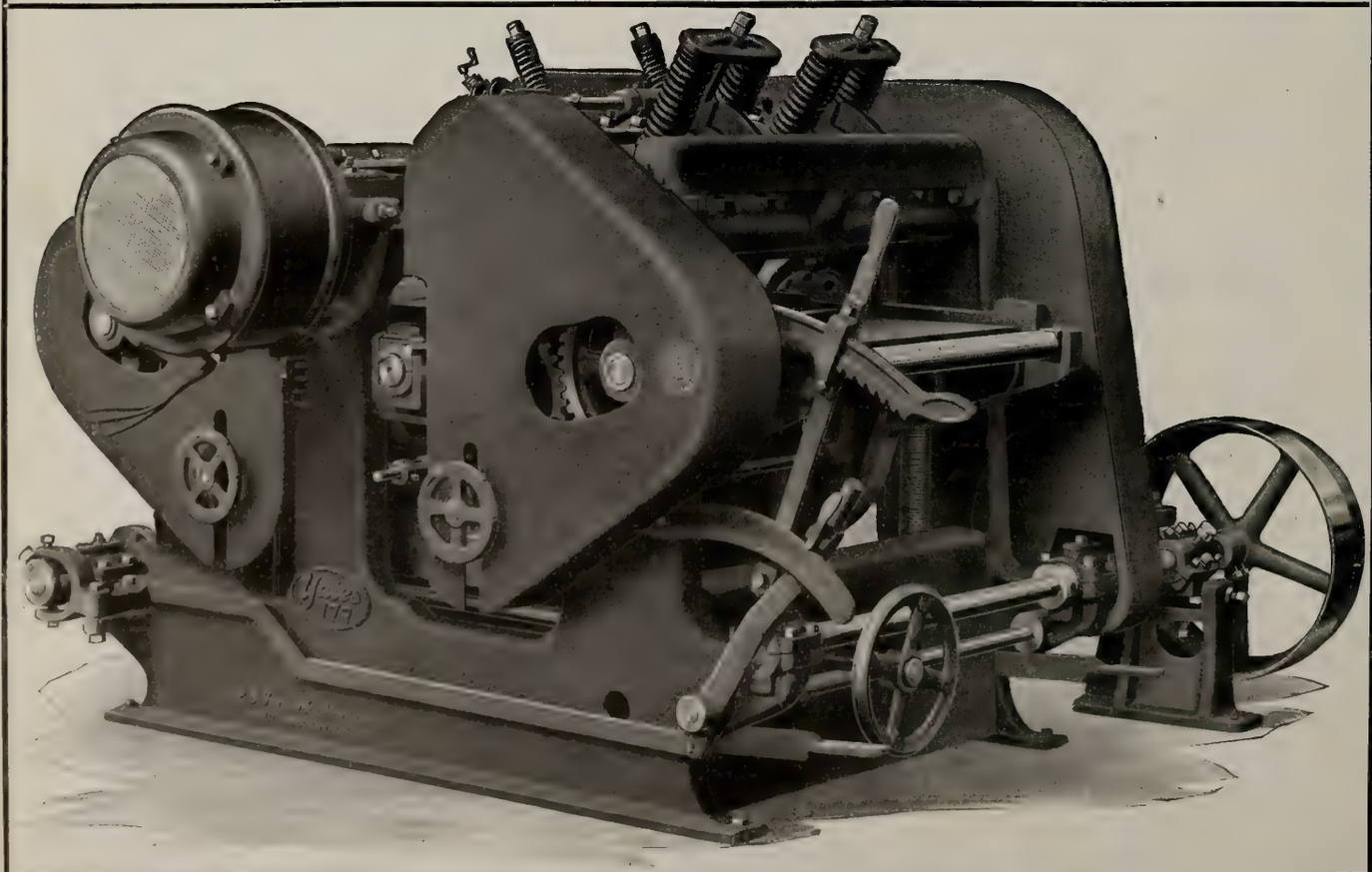
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HAMILTON, ONT. CANADA

U.S. Plant: Beloit, Wisconsin.

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Stamped Goods in Brass, Tin, Copper, etc.

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We can devote to your work one of the finest equipments on this continent, manned by highly skilled mechanics, working under the direction of experts.

Our mechanical organization has been devoted, during the past two years, to the production of Munitions involving the very highest degree of precision, as well as maximum output. There is nothing of the above character in the commercial field which we cannot manufacture successfully.

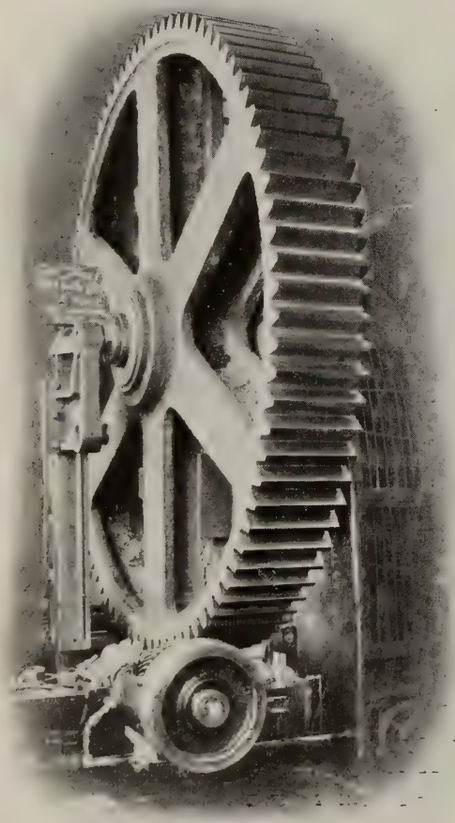
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276 KING STREET WEST - TORONTO

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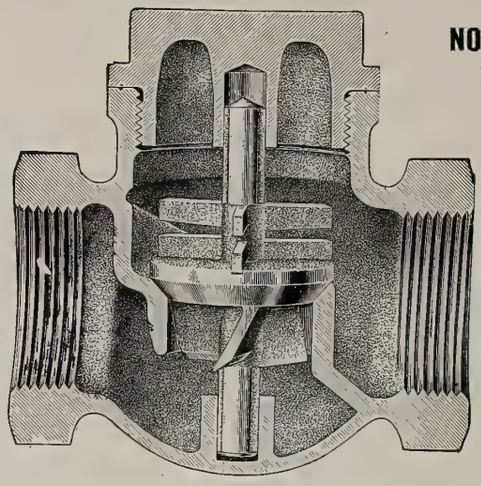


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90" dia., 6,500 lbs.
88 T., 1 d.p., 12" F.

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Hamilton Gear & Machine Co.
Van Horne Street, TORONTO

MUELLER



NON-FOULING TURBINE CHECK VALVE

McLeod-Mueller Patent

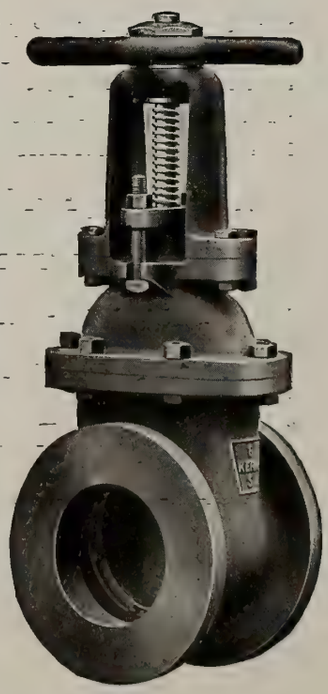
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Kerr Iron Body Gate Valves



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Every valve tested and guaranteed.

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1—20 ft. x 10 ft. Bertram Engine Lathe, B.G., with 3-Jaw Scroll Chuck and Bertram Waving Attachment. Tooled for Mark VII wave rib.
1—18 in. x 12 ft. Engine Lathe, B.G., with 3-Jaw Scroll Chuck and Bertram Waving Attachment. Tooled for Mark VII wave rib.
1—Newton 2-Spindle Boring Machine, fitted with tool holders and chucks for boring fuse hole.
1—Brown-Boggs Marking Machine, converted for finished tapping fuse hole, with tap holder and sliding chuck.
1—Special 3-Spindle Finished Turning Machine, complete with tool holders and profile cam.
1—18 in. x 6 ft. Draper Engine Lathe with split chuck and steady rest. Equipped with boring bar for inside profile.
1—Holden-Morgan Thread Milling Machine for Base Recess. Thread with attachment for threading base plates.
3—18 in. Single Drive Head Stocks with Hinged Chucks, suitable for repair work on shells.
1—18 in. Single Drive Head Stock with 3-Jaw Scroll Chuck, steady rest and saddle. Suitable for correcting weight, etc.
1—3-Spindle Drill Press for drills No. 0 to ¼ in.
1—Steel Ring Banding Press, complete with Lymburner belt-driven power pump, tank, piping and valves.
1—Copper Band Turning Machine, with friction clutch on countershaft. Tooled for Mark VII band.
1—7-Hole Tate-Jones Nose Heating Furnace. Oil fired. Equipped with high and low pressure burner. Complete with Root L.P. Blower and Piping.
1—80 Shell Capacity Varnish Baking Oven.
1—Fixture for Nicking Nose.
1—Single Spindle Motor-Driven Paint Table, 250 Volts D.C.
1—Single Spindle Motor-Driven Varnish Table, 250 Volts D.C.
1—Paasche Air Varnishing Outfit.
4—4-Jaw Screwed Ring Type Chucks with babbited steady rest.
2—4-Jaw Hand-Operated Draw Chucks with steady rests.
5—Hinged Vices, for hand tapping or riveting base.
1—3-Jaw Scroll Chuck with extension and steady rest.
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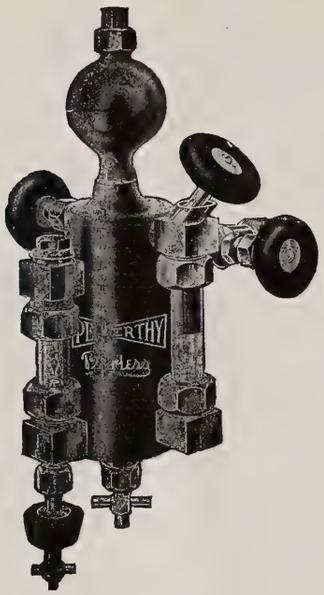
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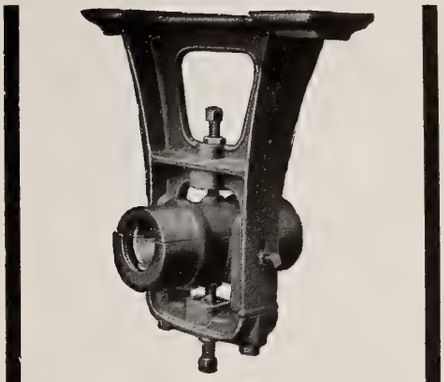
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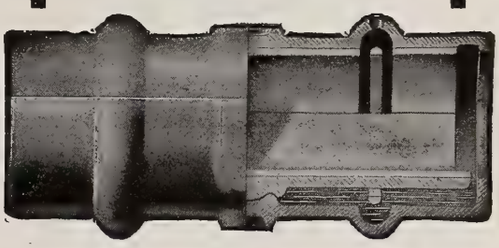
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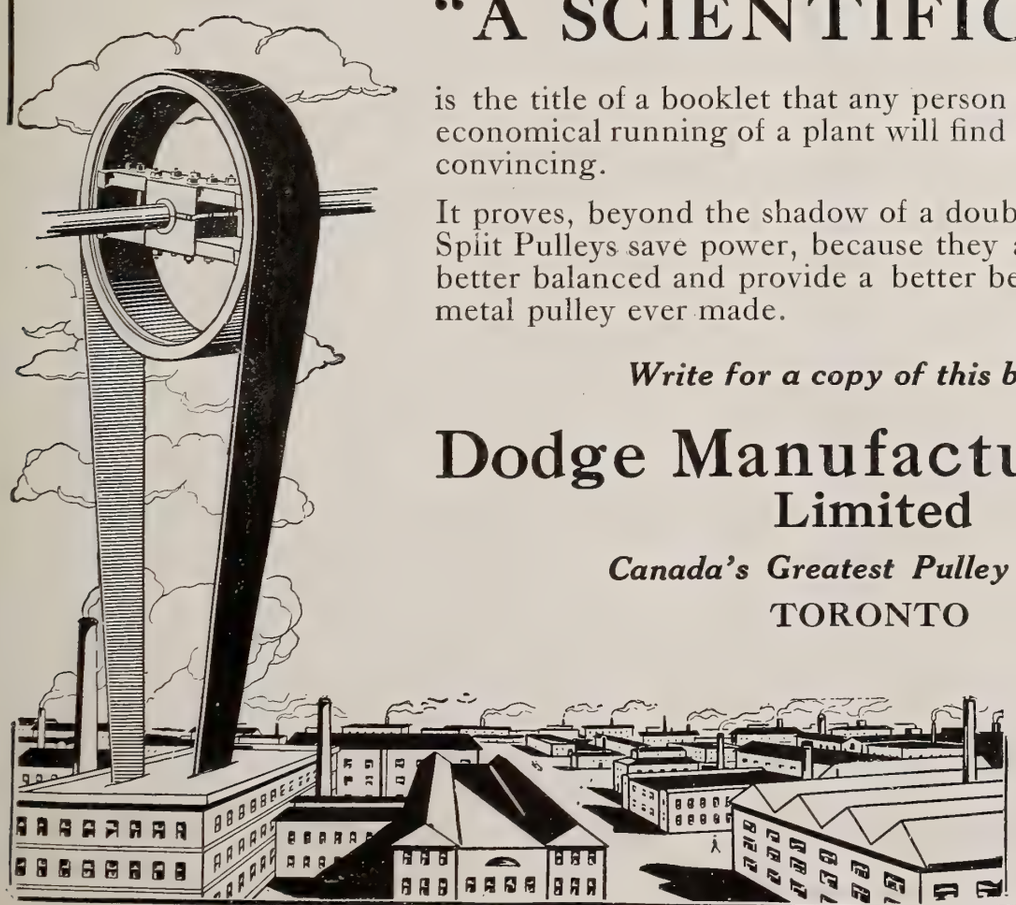
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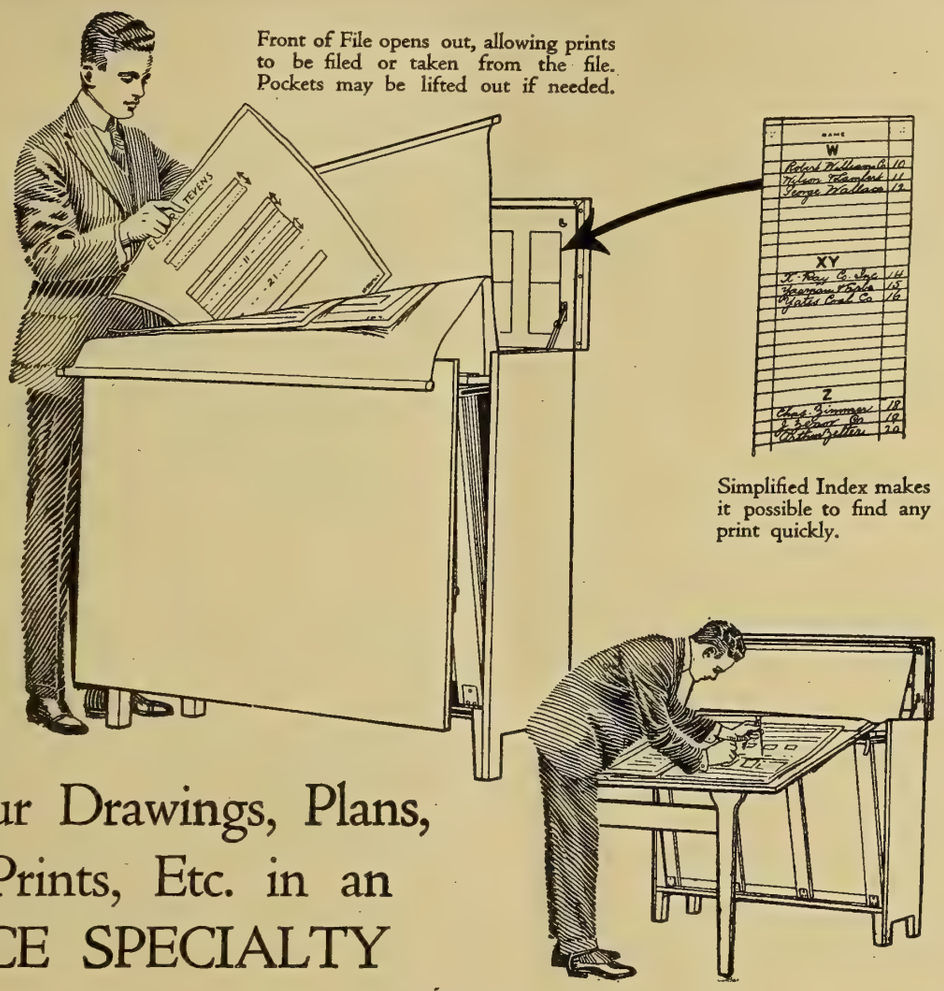
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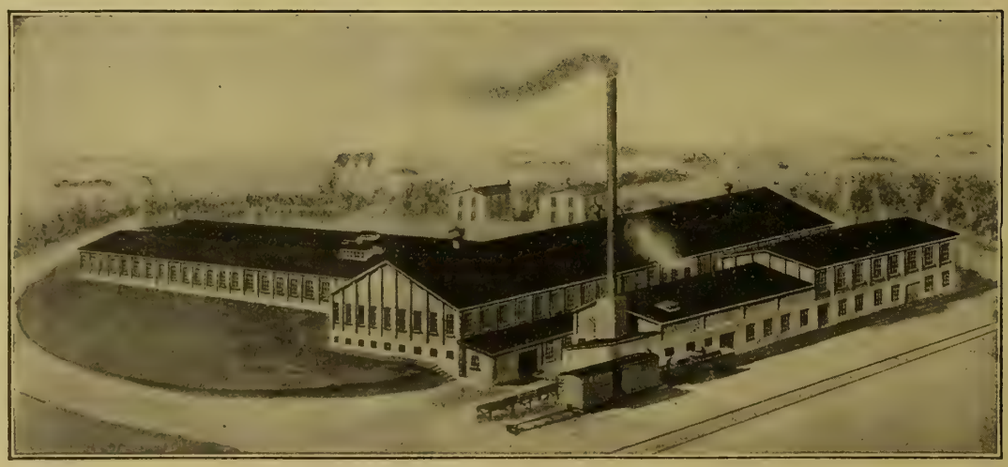


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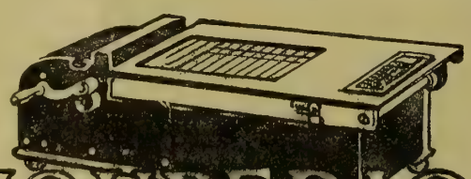
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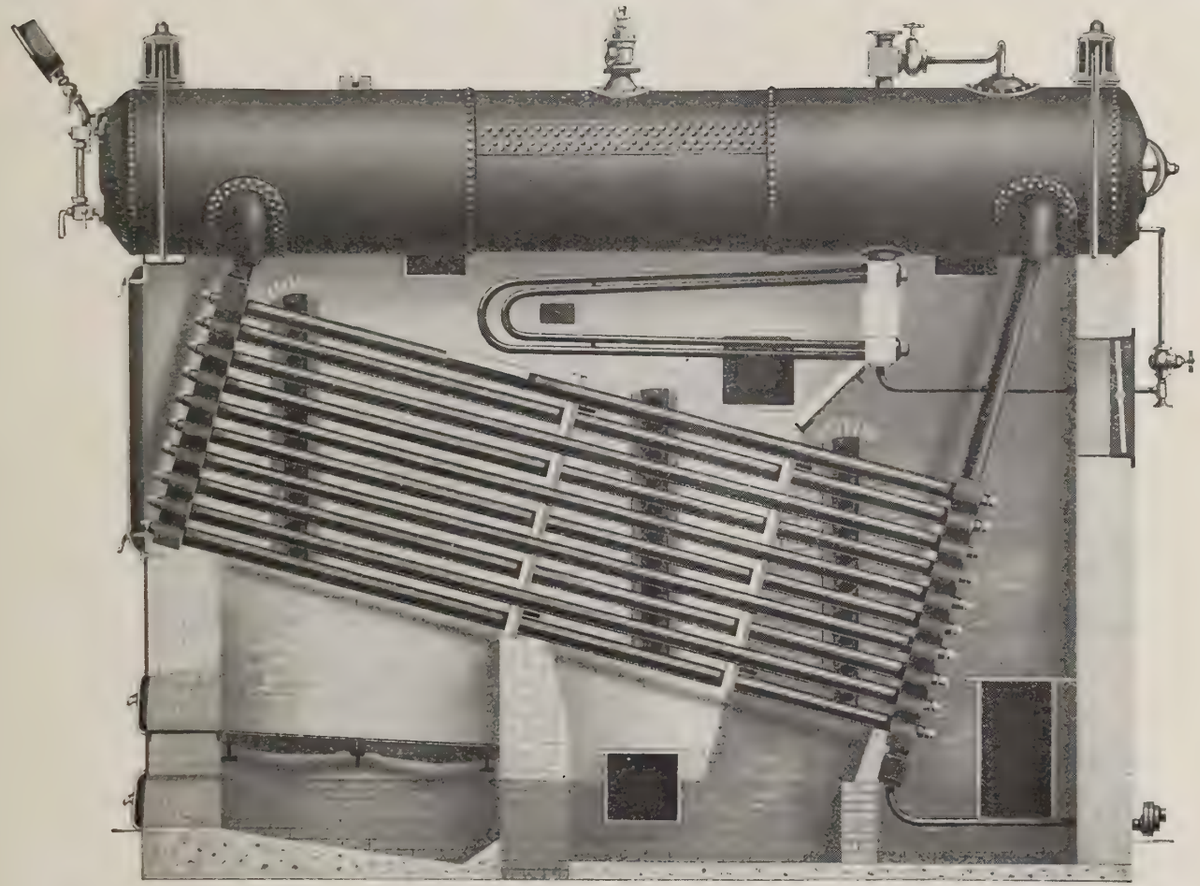
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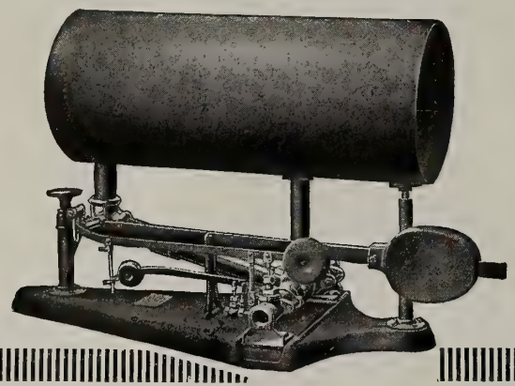
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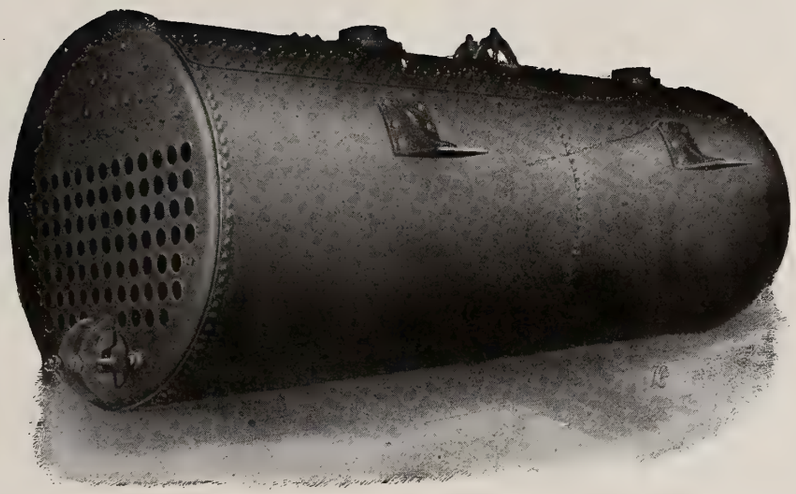
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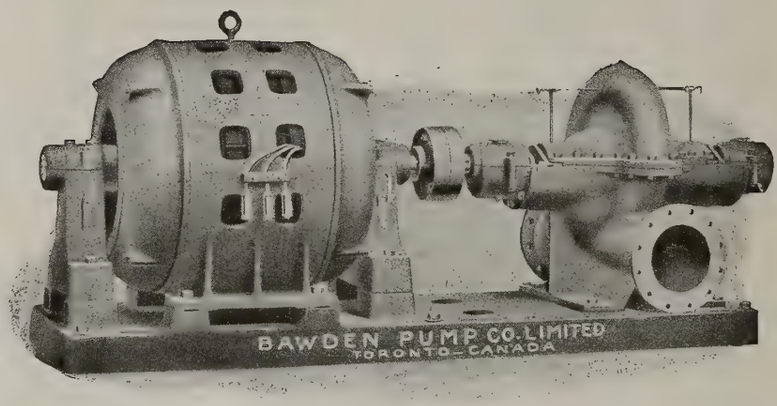
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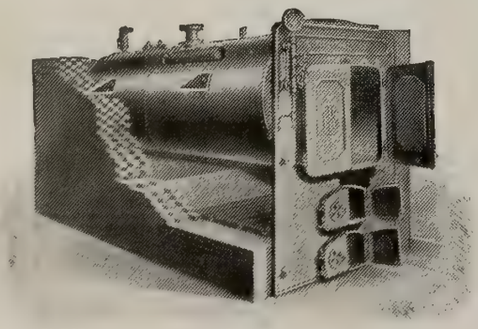
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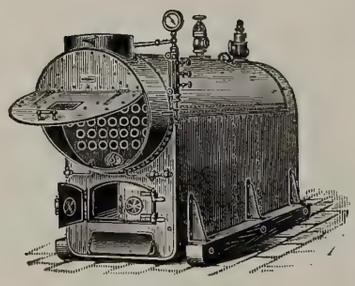
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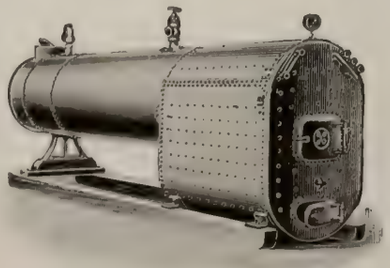


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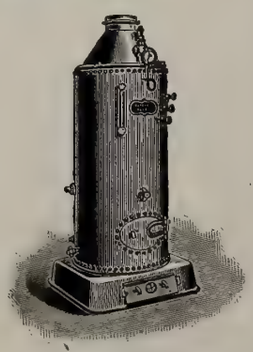
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H. E. Plant, 1790 St. James St., Montreal
R. Hamilton & Co., Vancouver
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TORONTO

Steel Shipbuilders Engineers and Boilermakers

STEEL STEAMERS
Tugs, Scows and Dredges, Marine Engines and Boilers.

STATIONARY BOILERS
Horizontal and Water Tube Type Stacks, Tanks, Water Flumes.

SPECIAL MACHINERY
Estimates given on all kinds of special Machinery.

REPAIR WORK
Given prompt attention.

Office and Works:
Esplanade St. East, Toronto

INDUSTRIAL LOCOMOTIVES

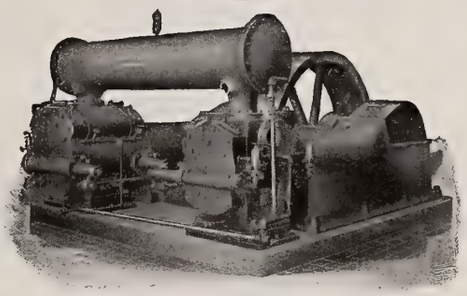


Locomotives on trunk line railroads have the advantage of the best facilities for inspection and repairs.

Industrial locomotives face different conditions. They must work day after day in the hardest service, and often in localities where repairs cannot be made without great inconvenience. That is why we build our industrial locomotives from interchangeable stock parts. With this system every part must fit every other locomotive of the same size and design, and long delays waiting for duplicate parts is avoided. Interchangeable parts kept on hand at our Works for prompt shipment.

MONTREAL LOCOMOTIVE WORKS, LTD.
DOMINION EXPRESS BUILDING, MONTREAL, CAN.

Air Compressors



DB2 AIR COMPRESSOR

EFFICIENT, RUGGED

Moderate in cost. Built to successfully stand severe and continuous service. Full range of sizes and types.

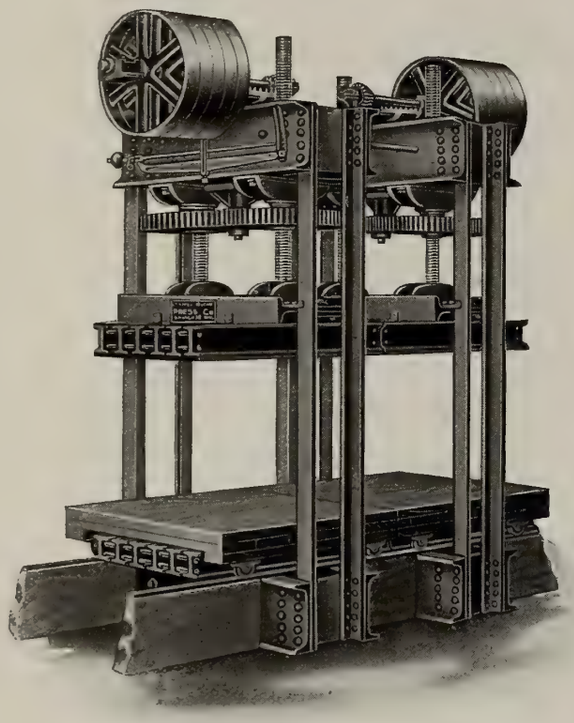
Write for Bulletins

THE JENCKES MACHINE CO., LIMITED

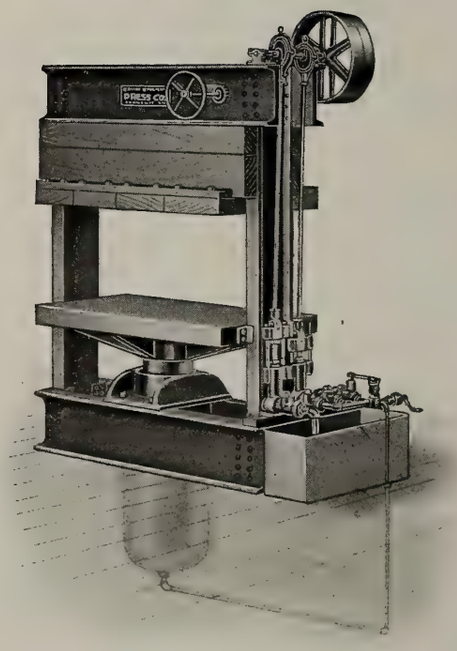
Works:
Sherbrooke, Que.
St. Catharines, Ont.

Sales Offices:
Halifax, Montreal
Toronto, Cobalt
South Porcupine
Vancouver

VENEER PRESSES



HYDRAULIC
AND
BELT DRIVEN

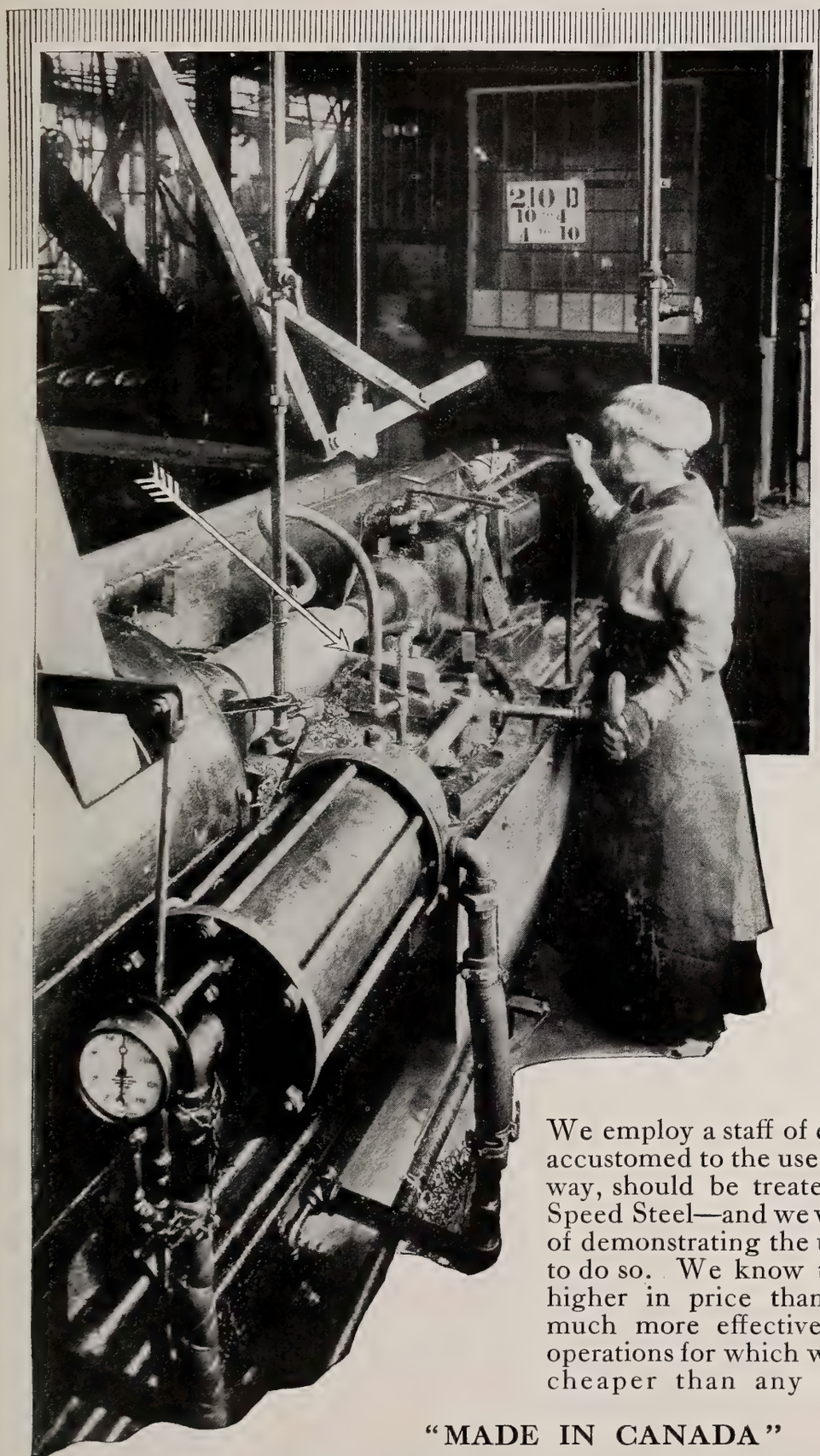


HYDRAULIC PUMPS
AND
ACCUMULATORS

WRITE FOR BULLETIN C1

THE HYDRAULIC MACHINERY CO. LIMITED

MONTREAL, CAN.



"Not a Steel, but its Master"

STELLITE

STELLITE is an alloy of rare metals, containing no iron; so hard that it is being successfully used everywhere in Canada in cutting cast iron and all qualities of steel, including Nickel, Vanadium and other Alloy Steels.

So useful is this cutting metal in increasing production that in one large Toronto shop where the Management failed to supply the shop with Stellite, the individual workmen, one after another, called at our Warehouse in Toronto and bought STELLITE tools for themselves, to increase the output of their lathes and their own incomes.

We employ a staff of expert Machinist demonstrators accustomed to the use of STELLITE—which, by the way, should be treated quite differently from High Speed Steel—and we will be glad to have the privilege of demonstrating the uses of STELLITE if requested to do so. We know that, despite the fact that it is higher in price than High Speed Steel, it is so much more effective in increasing output in the operations for which we recommend it that it is much cheaper than any other cutting metal known.

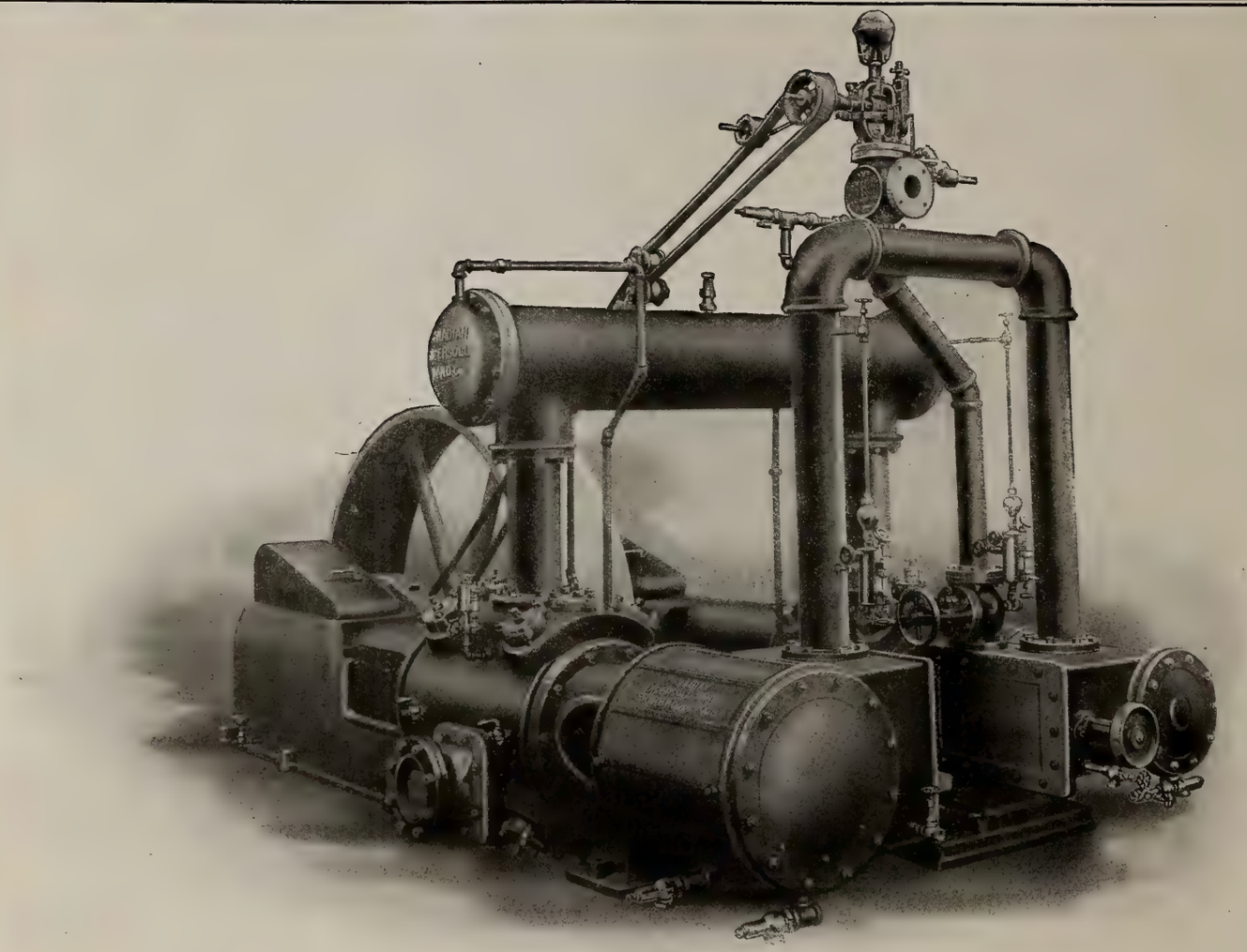
"MADE IN CANADA"

by

DELORO SMELTING & REFINING CO., Limited

DELORO - ONTARIO

Branch Office and Warehouse, 200 King St. W., Toronto and 315 Craig Street W., Montreal



Class "RL-3," Duplex Type, Steam Driven, Two Stage Air Compressor with Intercooler. Equipped with Speed and Pressure Governor, Meyer Adjustable Cut-off on High Pressure Steam Cylinder, Dust-proof Construction, Splash and Flood Lubrication System, and "Circo" Silent Leaf Valves
Two sizes : 732 and 1,160 cubic feet displacement respectively

Features Which Mean Economy

EASE OF INSTALLATION : While this type of compressor is practically a solid unit when installed, yet it breaks up into parts handled with ease, and convenient for transportation. The foundation is of a type easily built and the foundation bolts are so disposed as to be easily spaced and readily installed.

LUBRICATION : The flood system of lubrication adopted reduces the mechanical friction losses to a minimum, and the delivery of oil is at all times proportioned to the speed of the machine.

CONVERTIBILITY : This machine may be readily converted to belt drive at any time by simply disconnecting the steam pistons and steam valve gear.

CLEANLINESS : The enclosed construction makes the machine perfectly dust-proof and prevents the escape of oil.

OVER-ALL ECONOMY IN POWER : The "Circo" silent leaf valves secure efficiency in the intake and output of air and reduce valve maintenance to a minimum.

The adjustable steam valve gear enables the steam consumption to be graded to suit the steam pressure and the load, resulting in economy closely approaching that of the releasing type of valve gear.

The liberal water jacketing and ample intercooler surface provided also contribute largely to the sum total of economical production of compressed air by this type of machine.

If you require a compressor of any capacity from 64 to 6,500 cu. ft. displacement per minute, write our nearest branch office stating your requirements. Prices and full information will be promptly sent you. We have many machines under construction of various types and sizes, and good deliveries can usually be made.

CANADIAN INGERSOLL-RAND CO., Limited

COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Sydney Toronto Cobalt Timmins Winnipeg Nelson Vancouver

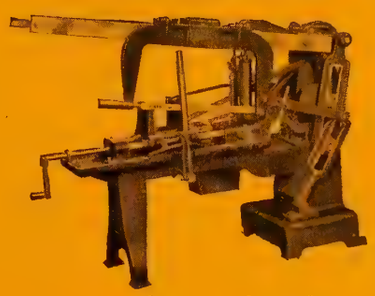
Works : SHERBROOKE, QUE.

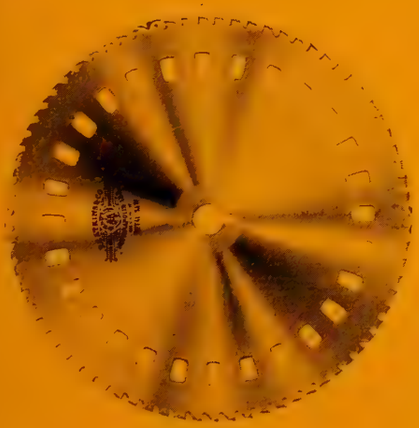
ATKINS
Metal Cutting Saws



Our Power Hack Saw Blades are the best in the world. We know that they are unsurpassed for efficient service, because we formulate the steel and temper it by ATKINS' exclusive process. Let us prove it by sending you a sample blade. The test will tell.

ATKINS KWIK KUT MACHINE is all the name implies—uses practically entire toothed edge of blade at each stroke. Its long stroke and other ATKINS features make the Kwik Kut a necessary adjunct in all shops. Quicker Cutting—Less Expense. Large descriptive folder on request.





Circular Metal Saws for all purposes that will increase the efficiency of any metal cutting machine. High quality and prompt service is our guarantee of satisfaction. Write for quotations.

E. C. ATKINS & CO.

Makers of Sterling Quality Saws for All Purposes

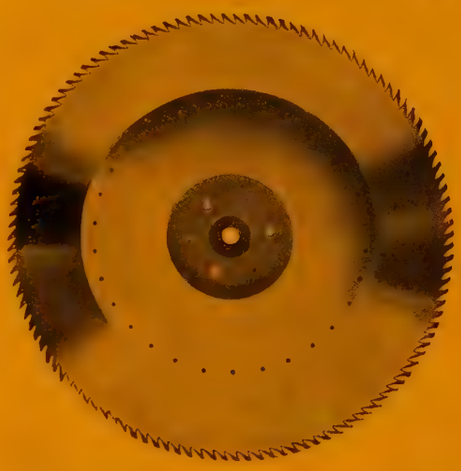
FACTORY—HAMILTON, ONT. VANCOUVER BRANCH—109 POWELL ST.

ATKINS

STERLING QUALITY SAWS







Assurance of the best results, both economic and productive, is found in the constant use of **Atkins Sterling Quality Saws.**

Steel of exceptional quality — that never varies — and the best workmanship has perfected these universally used saws.



Are your results as good as they should be? Try **Atkins Saws** and watch the improvement.

Send for our "C.L." Catalog containing items of interest to you.

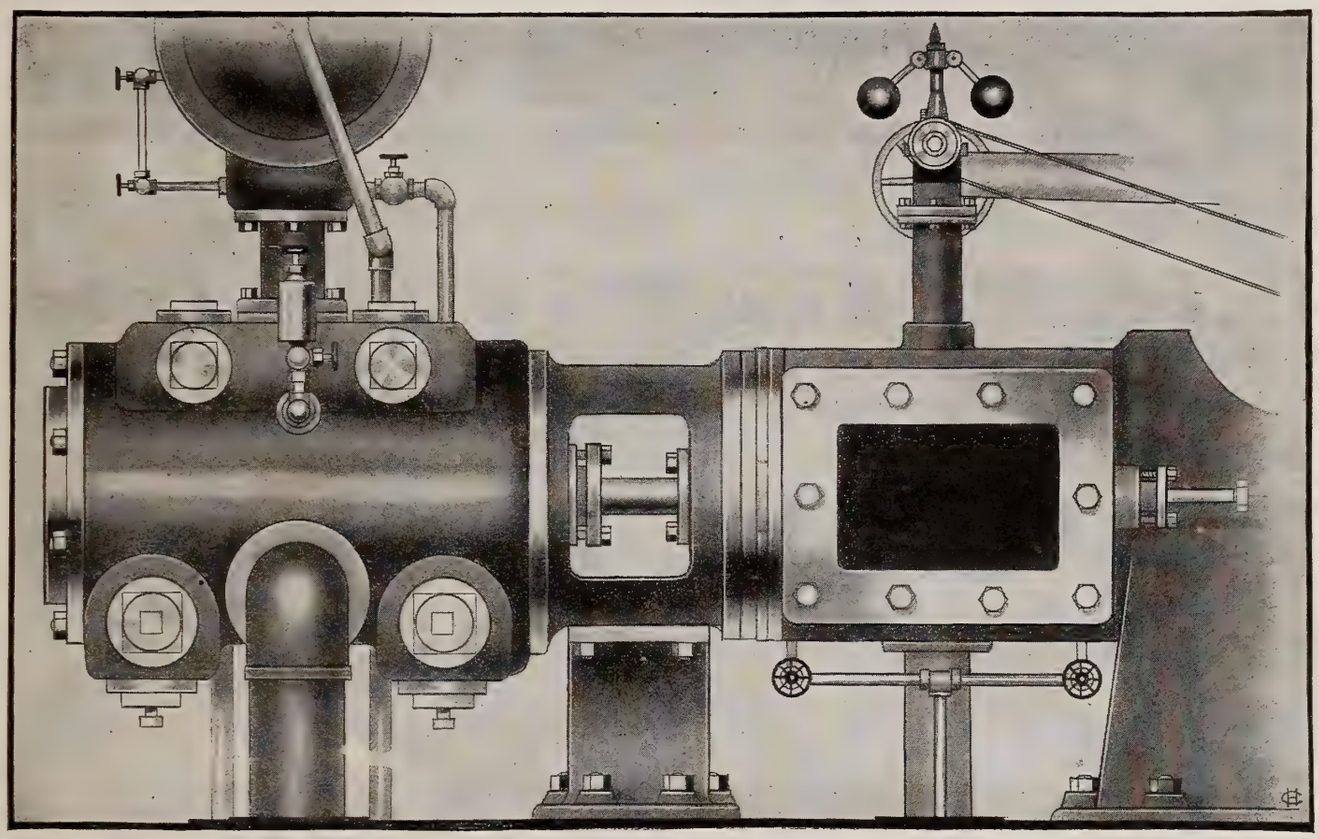


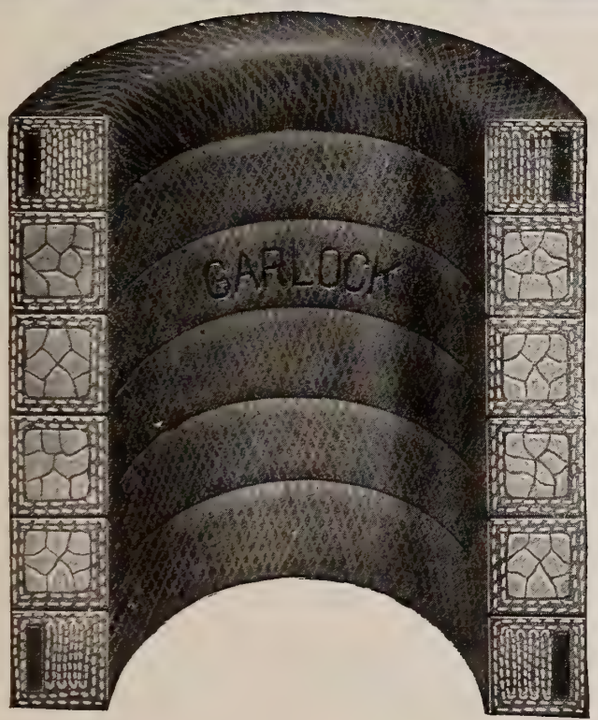
E. C. ATKINS & CO., Inc.

Established 1857

MAKERS OF STERLING QUALITY SAWS

Factory : Hamilton, Ont. *Vancouver Branch : 109 Powell Street*





GARLOCK
Air Compressor Packings

are designed to withstand the extremely severe conditions under which air compressors usually are operated. Style No. 420 is composed of high pressure and compressor combination rings. The Cushion center of the latter is covered by long fibre woven asbestos lubricated throughout with the celebrated Garlock Compound. This packing does not harden in service, but retains its elasticity under the high temperatures and pressures met with in this class of work.

Garlock No. 950 Gaskets are unsurpassed for service on air compressor cylinders and flanged joints.

THE GARLOCK PACKING COMPANY, Hamilton, Ontario

BRANCHES:

Montreal, Quebec.....409 Shaughnessy Bldg.
Toronto, Ontario.....404 Continental Life Bldg.
Winnipeg, Manitoba.....Galt Bldg.



CANADIAN WIRE ROPE

MANUFACTURED BY

The DOMINION WIRE ROPE COMPANY, Limited

Branch: Mail Bldg., TORONTO. Head Office: MONTREAL.

Tool Room Partitions



Machinery Guards
Window Guards
and
Wire Work of
every description

WIRE ROPE
ROPE FITTINGS

Manufactured by

THE B. GREENING WIRE CO., LIMITED

HAMILTON, ONT. MONTREAL, QUE.

ECONOMY

Rapid production is dependent on the use of ECONOMICAL TOOLS AND STEEL. It is safer ***not*** to specify High Speed Steel, but

Demand "Tyr," the Economy Steel

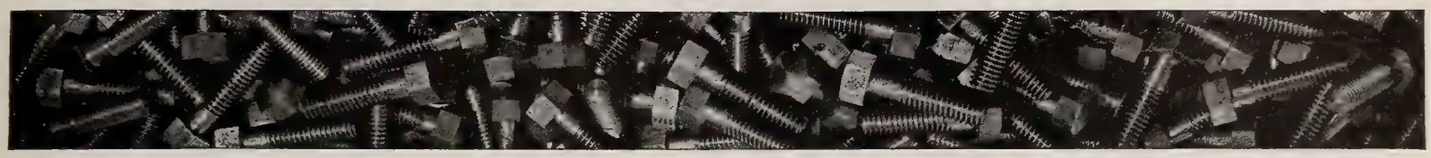
MADE IN CANADA

ARMSTRONG, WHITWORTH OF CANADA

LIMITED

Offices, 22 Victoria Square, Montreal Dominion Bank Building, Toronto

WORKS, LONGUEUIL, P.Q.



THE

NATIONAL ACME COMPANY

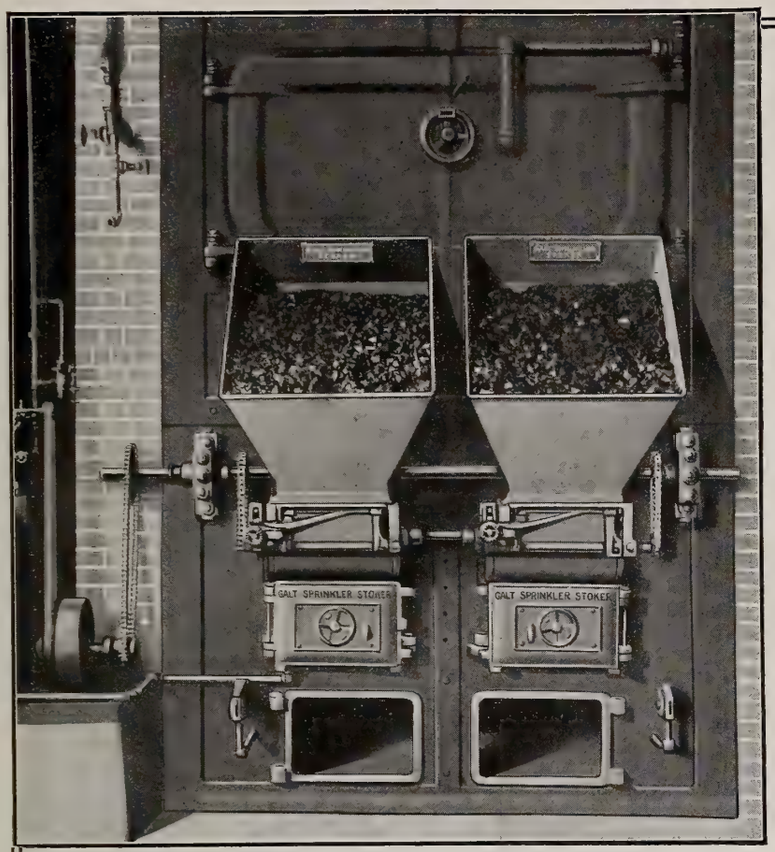
Makers of Screws, Nuts, Studs and Hexagon Brass Nuts in Standard threads and sizes. Also Special Screw Machine Work from Iron, Steel and Brass Bars up to $2\frac{1}{4}$" diameter and $10\frac{1}{2}$" long at

MONTREAL, P.Q.

De Courcelles & G.T.R., St. Henri



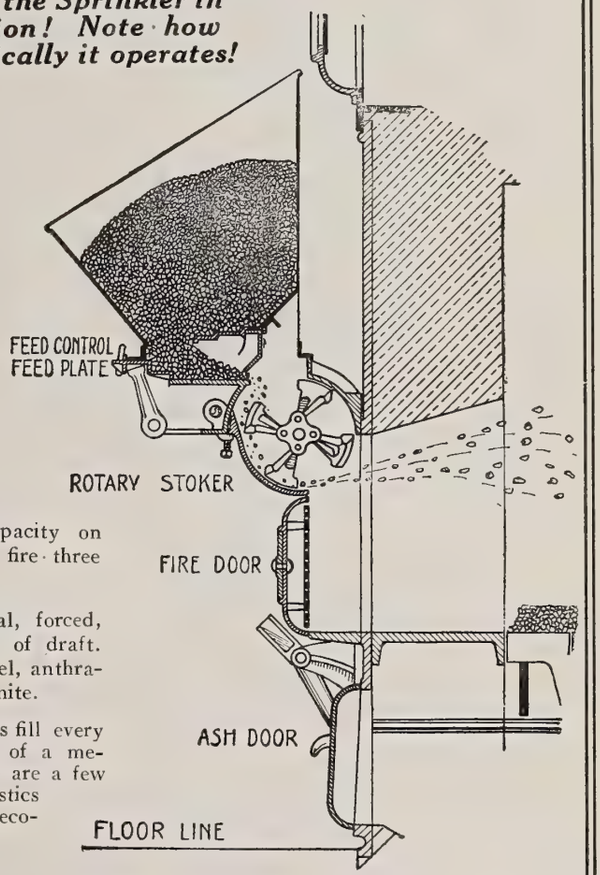

Quality
Service
STEEL & IRON
PRODUCTS
OF
EVERY DESCRIPTION
THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON
MONTREAL



Two Type "A" Galt Sprinkler Stokers applied to 150 H.P. Return Tubular Boiler. (Coal Hoppers immediately removable.)

GALT SPRINKLER STOKERS

See the Sprinkler in action! Note how logically it operates!



The Stoker mechanically feeds and perfectly spreads the fuel over the entire length and width of your present grates with the fire doors closed, in a light, continuous, uniform stream.

1. **Effects a saving in coal from 10% to 20%.**
2. **Effects a saving in labor from 25% to 50%.**
3. **Gives a brilliant, thin, perfectly level fire.**
4. **Gives smokeless combustion.**
5. **Increases the boiler capacity.**
6. **Increases the percentage of the CO_2.**
7. **Burns the fuel completely to the finest ash.**
8. **Operates for years without need of repair.**

Gives 170% boiler capacity on natural draft with a fire three inches thick.

Operates with natural, forced, induced or any kind of draft. Burns any kind of fuel, anthracite, bituminous or lignite.

Galt Sprinkler Stokers fill every practical requirement of a mechanical stoker. Here are a few of the many characteristics of this efficient and economical appliance.

We supply Power-Turbo Blowers, McNaughton Rocking Grates, Damper Regulators and other Power Plant Equipment. Send for illustrated catalog.

PARTIAL LIST OF RECENT CONTRACTS FOR GALT SPRINKLER STOKERS

"A"	The T. Eaton Co., Limited, Winnipeg .... 1600 H.P...	12	Stokers
"A" X	The T. Eaton Co., Limited, Toronto (1 Boiler) 750 H.P.	3	"
"A"	Hinde & Dauch Paper Co., Limited, Toronto	8	"
X	Spanish River Pulp & Paper Co., Sturgeon Falls, Ont. 1200 H.P.	8	"
	Dryden Timber & Power Co., Dryden, Ont. 1200 H.P..	12	"
	P. Burns & Co., Vancouver, B.C.	6	"
	Dominion Power & Transmission Co., Hamilton, Ont...	3	"
"A"	Dominion Oil Cloth Co., Montreal.....	2	"
	Corporation of Vegreville, Alberta	4	"
"A"	City of Winnipeg General Hospital, Winnipeg, 1000 H.P..	8	"
"A" X	Gordon, Ironside & Fares, Winnipeg	3	Stokers
	City of Brandon, Brandon, Man.....	2	"
XX	Hamilton Cotton Co., Hamilton, Ont.	6	"
	Provincial Paper Mills Co., Thorold, Ont.	2	"
	Lister Chambers, Hamilton, Ont.....	4	"
	Board of Education, Hamilton, Ont.....	2	"
		85	

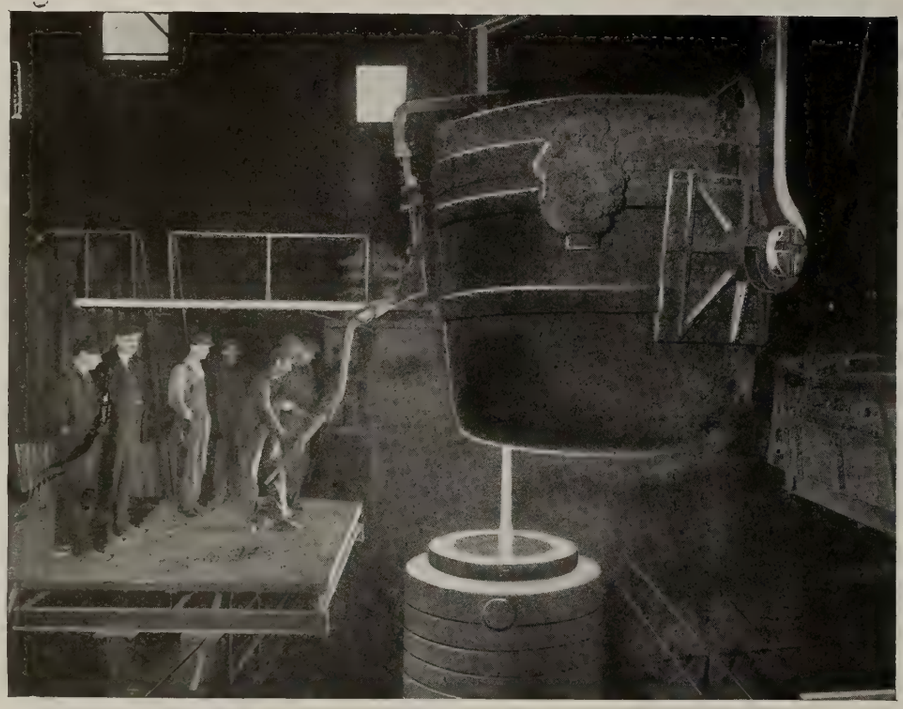
X Repeat Order.

"A" Stokers to Burn { 75% Hard Coal Screenings mixed with 25% Bituminous Slack.

THE GALT FOUNDRY CO. - GALT, ONT.

ALBERTA	MONTREAL	TORONTO	HAMILTON, ONT.
W. J. Yeo & Co.	Ross & Greig	W. M. McRobert	D. Turner
210 McLeod Block, Edmonton	412 St. James Street	Phone Junc. 3354	110 Lister Chambers

OUR FIELD IS THE WHOLE WORLD



A 30-Ton Ingot
being poured
at the
Blast Furnace
at
Sydney Mines
N.S.

"OLD SYDNEY COAL"

Shipped from North Sydney, N.S.

At Wabana, Nfld., the Company's Iron Mines are located, these being the richest in ore on the North American continent.

The Company's Collieries and Blast Furnaces are at Sydney Mines, N.S.

From the Steel Works and Car Works at New Glasgow come the Company's finished manufactured products.

Address All Correspondence to the Head Office

NOVA SCOTIA STEEL & COAL CO.
LIMITED

Head Offices:
NEW GLASGOW, N.S.



BROWN'S

BEAVER BRAND METALS

MADE IN CANADA

The following are Beaver Brand Products, all dependable and satisfactory:

Brass, Bronze, Canada Silver and Gilding Metals in Sheets, Rolls, Plates and Rods, also Special Marine Bronze Rod for Shafting and Bearings, and Beaver Brand Spinning Brass and Beaver Brass Rod for Drilling and Free Turning.

Send an order and become acquainted with the merits of Beaver Brand Products.

BROWN'S COPPER AND BRASS ROLLING MILLS, LTD.

GENERAL OFFICES AND MILLS:

NEW TORONTO ONT., CANADA

COPPER & BRASS BROWN'S QUALITY ROLLING MILLS

The Safest Matches in the World

Still another improvement has been made to Eddy's "Silent 500s." Each stick is impregnated with a chemical solution that prevents the wood glowing or smouldering after the flame is blown out.

Eddy's "500s" strike easily, quickly and silently, on the box or elsewhere. But once blown out they are extinguished ***absolutely.***

These are the matches to use in home, office or factory—the matches that mean the greatest convenience with danger of fire reduced to the lowest point conceivable.

The E. B. Eddy Company, Limited

HULL - QUEBEC

Established 1851

Shurly & Derrett, Limited

TORONTO



Manufacturers of

TWINES

COTTON AND JUTE ROPE

MILL & SPINDLE BANDING, etc., etc.

DOON TWINES

LIMITED

KITCHENER, ONT.

Manufacturing a Full Line of

Flax, Hemp and Jute Twines

We Specialize in

Mattress, Tufting, Broom, Sewing, Stitching, Warehouse and Bundling Twines; also Ropes, Plow Lines and Clothes Lines

Having the raw material on hand to spin the above we can guarantee delivery.

Write for Samples and Prices

MILLS: DOON and KITCHENER

BANK OF MONTREAL

Established 100 Years (1817-1917)

Capital Paid Up - -	$16,000,000
Rest - - - - - -	16,000,000
Undivided Profits - -	1,557,034
Total Assets - - -	$386,806,887

BOARD OF DIRECTORS:
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Sir Charles Gordon, K.C.B.E., Vice-President

R. B. Angus, Esq. — Wm. McMaster, Esq.
Lord Shaughnessy, K.C.V.O. — Major Herbert Molson, M.C.
C. R. Hosmer, Esq. — Harold Kennedy, Esq.
H. R. Drummond, Esq. — H. W. Beauclerk, Esq.
D. Forbes Angus, Esq. — G. B. Fraser, Esq.

Head Office: MONTREAL

General Manager, Sir Frederick Williams-Taylor
Assistant General Manager, A. D. Braithwaite

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

Branches at all important points in Canada, and at

Agency:

NEW YORK	LONDON, ENGLAND	CHICAGO
64 Wall St.	47 Threadneedle St.	108 South La Salle St.

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

SIR JOHN AIRD, General Manager — H. V. F. JONES, Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work. S.57

THE ROYAL BANK OF CANADA

Incorporated 1869

Capital Authorized	$25,000,000
Capital Paid Up	$12,911,700
Reserve & Undivided Profits	$14,324,000
Total Assets	$295,000,000

HEAD OFFICE, MONTREAL

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Sir Herbert S. Holt, President — E. L. Pease, Vice-President and Man. Director
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Hugh Paton	C. E. Neill	G. G. Stuart, K.C.
Wm. Robertson	Sir Mortimer B. Davis	

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E. L. Pease, Managing Director
C. E. Neill, General Manager — F. J. Sherman, Asst. Gen. Manager
W. B. Torrance, Superintendent of Branches

Branches in every Province of the Dominion of Canada and in Newfoundland; in Havana and throughout Cuba, Porto Rico, Dominican Republic, Costa Rica and Venezuela; Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; St. Kitts, Basseterre; Trinidad, Port of Spain, San Fernando; British Guiana, Georgetown, New Amsterdam; British Honduras, Belize.

LONDON, ENG., OFFICE—Princes St., E.C.

NEW YORK AGENCY—Corner William and Cedar Sts.

Savings Department at All Branches

ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP $7,000,000 — **RESERVE FUND $7,000,000**

PELEG HOWLAND, President — E. HAY, General Manager

The Bank offers a service of the highest order to Canadian manufacturers because of its 128 Branches located in important industrial and agricultural centres throughout Canada.

COLLECTIONS made at all points in Canada and in foreign centres.

DRAFTS—Money Orders and Letters of Credit issued, available throughout the world.

EXCHANGE—Domestic and Foreign Exchange bought and sold.

SAVINGS received at all Branches—interest credited half yearly at current rate.

Accounts of Merchants and Manufacturers solicited.

HEAD OFFICE - TORONTO

UNION BANK
OF CANADA

Established 1865 Head Office, Winnipeg

Paid-up Capital.....$5,000,000 Reserve Fund.....$3,400,000

Total Assets over.....$109,000,000

IN EXTENDING YOUR EXPORT TRADE

you will find the facilities offered by the Union Bank of Canada a decided advantage in handling Drafts, Collections and Foreign Exchange.

The Commercial Information Bureau established in connection with the Foreign Exchange Department of our London (Eng.) Office is at your service.

London, England, Branches:
6 Princes St. E.C. Haymarket, S.W.

New York Agency: 49 Wall Street, New York City. GEO. WILSON, Agent.

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - $4,866,666
Reserve Fund - $3,017,333

Statement to the Dominion Government (Condensed), 31st July, 1917.

LIABILITIES TO THE PUBLIC.

Notes in Circulation	$ 5,393,091
Deposits	53,359,533
Other Liabilities	1,109,398
	$59,862,022

ASSETS.

Cash on Hand and in Banks	$10,679,101
Deposit with Government o/a Note Circulation	245,822
Government, Municipal and other Securities	10,766,692
Call and Short Loans	6,723,977
Current Loans and Discounts and other Assets	38,009,594
Bank Premises	2,348,293
	$68,773,479



The World's Best

Of all the pure foods made or sold in Canada, there is none that holds a higher place in the Grocers' esteem than

Windsor Table Salt
Made in Canada

It has been his standard of purity for years—and has always maintained its well-earned reputation as the "Canadian Salt without a fault."

THE CANADIAN SALT CO. LIMITED

The Merchants Bank of Canada

Head Office - MONTREAL

Paid-Up Capital	$7,000,000
Reserve Funds	7,421,292
Total Deposits	92,102,072
Total Assets	121,130,558

BOARD OF DIRECTORS

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K. W. BLACKWELL, Vice-President

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C. C. BALLANTYNE — G. L. CAINS — LT.-COL. J. R. MOODIE

E. F. HEBDEN, Managing Director
D. C. MACAROW, General Manager
T. E. MERRETT, Superintendent of Branches and Chief Inspector

A GENERAL BANKING BUSINESS TRANSACTED

236 BRANCHES AND AGENCIES IN CANADA

Extending from the Atlantic to the Pacific

SAVINGS DEPARTMENT AT ALL BRANCHES

Deposits received and Interest allowed at best current rates

New York Agency: 63 and 65 WALL ST.

The Bank of Nova Scotia

ESTABLISHED 1832

Capital	$6,500,000
Reserve Fund	12,000,000
Total Assets	Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

UNITED STATES: Boston, Chicago, New York
CUBA: Havana
PORTO RICO: San Juan
JAMAICA: Kingston and 9 other points.
NEWFOUNDLAND: St. John's and 16 other points.

LONDON AGENTS:
The London Joint Stock Bank, Limited

With its widespread system of branches and established connections in Foreign Countries this Bank is especially well equipped to handle the accounts of exporters.

CORRESPONDENCE SOLICITED

General Office: Toronto, Canada

H. A. RICHARDSON, General Manager

TRADES AND LABOUR BRANCH

NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur.
H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.
D. M. MEDCALF, Chief Inspector of Steam Boilers.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant witnout a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.
W. C. McGHIE, Chairman of Board.
W. A. RIDDELL, M.A., Ph.D., Superintendent.

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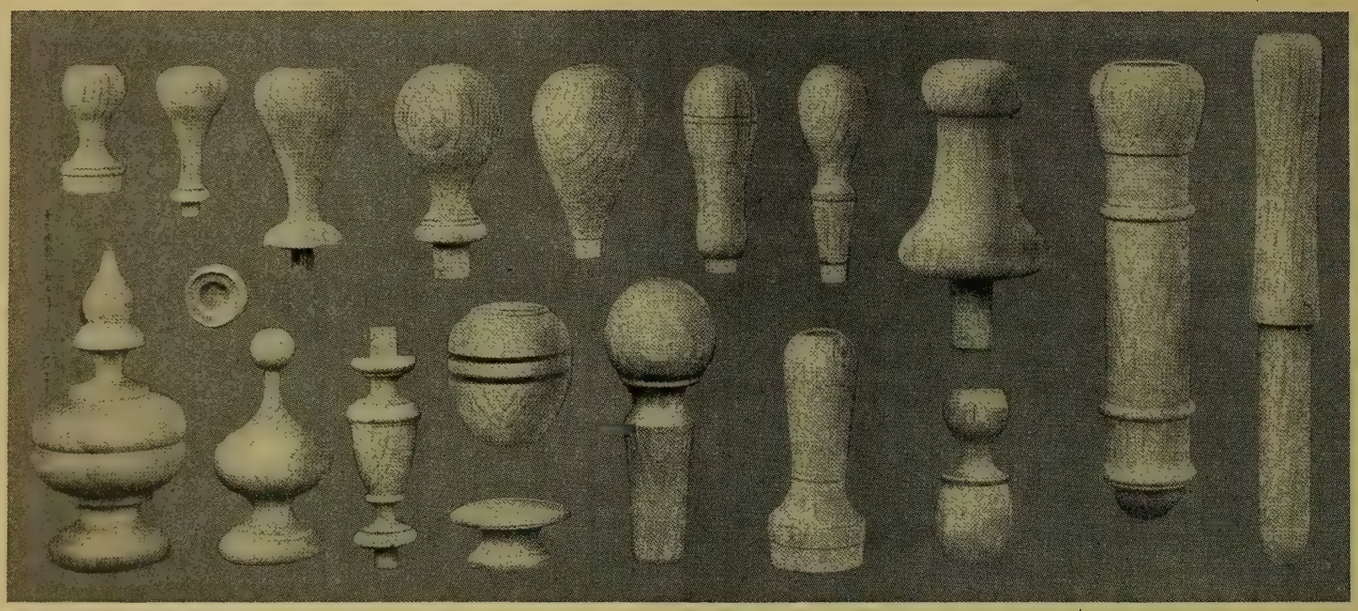
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Those Smooth Dowels

The new dowel machine is a wonder for efficiency. The new process dowel made from it is round. Always round. There is nothing about the manufacturing process which could produce anything but a round dowel.

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These machines are adjustable to any size from 3/16 of an inch to one inch, making these changes as fine as to a 64th of an inch. Our smooth dowels are straight, round and perfect.

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We show above a few of the many shapes which we can turn out with our special automatic machinery.

We are in the centre of the hardwood district and can turn out any shape wanted, in any quantity, perfect and smooth, at short notice. Write us about anything which you may need that can be turned out of wood.

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Birch, Beech and Maple
Plain, per 1,000 Pieces

Length	3-16 in.	1-4 in.	3-8 in.	1-2 in.	5-8 in.
12 in.	$1.50	$1.50	$1.80	$2.20	$2.95
16	1.95	1.95	2.40	2.95	3.93
18	2.20	2.20	2.67	3.35	4.40
24	2.95	2.95	3.60	4.40	5.90
27	3.35	3.35	4.05	5.00	6.60
30	4.05	4.05	5.00	6.16	8.20
33	4.50	4.50	5.50	6.75	9.00
36	4.95	4.95	6.00	7.33	9.80
42	5.70	5.70	7.00	8.60	11.50
48	6.50	6.50	8.00	9.80	13.05
54	9.20	9.20	11.20	13.80	18.40
60	11.25	11.25	13.75	16.85	22.50
66	13.05	13.05	16.00	19.55	26.05
72	14.75	14.75	18.00	22.05	29.40
No. dowels to bundle	1000	500	200	200	100

Besides the above sizes, we make dowels up to 1 in. or any fraction thereof. In addition to the smooth kind we make the glue joint dowel in all sizes.

Tell us your wants and get our prices.

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¶ We have large stocks of Pine and Spruce Lumber, the product of three modern mills.

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¶ We can surface, joint, match, resaw and rip; our machinery is the latest and our workmen the most skilled.

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We would be pleased to solve your building problems.

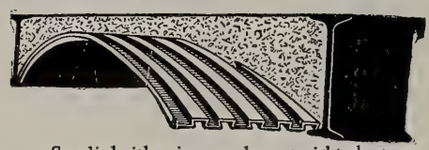
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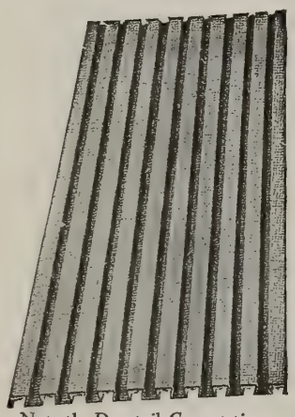
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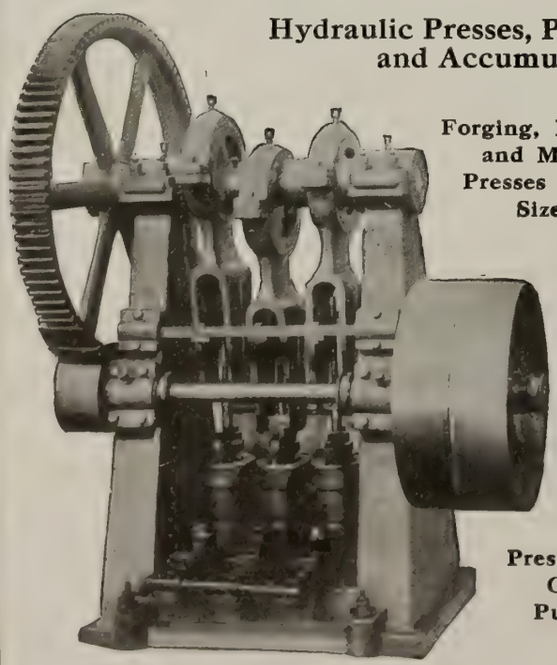
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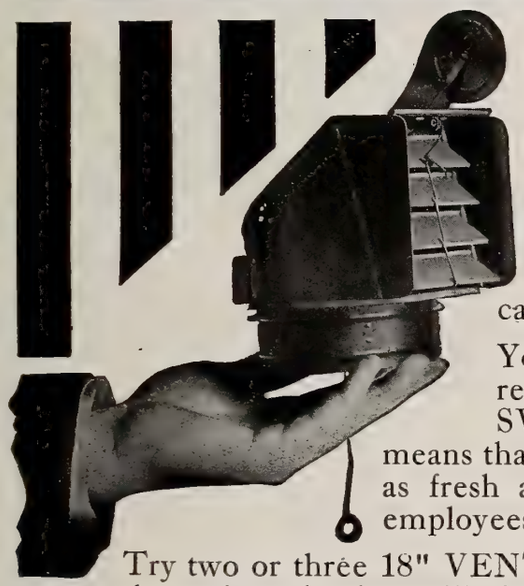
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You can only get this by drawing out the stale air, and replacing with fresh, vitalized air. The ORMSBY SWARTWOUT VENTILATORS do this for you. It means that at five o'clock in the afternoon, your employees are just as fresh as in the morning. Your output is increased, your employees healthier, happier, and more contented.

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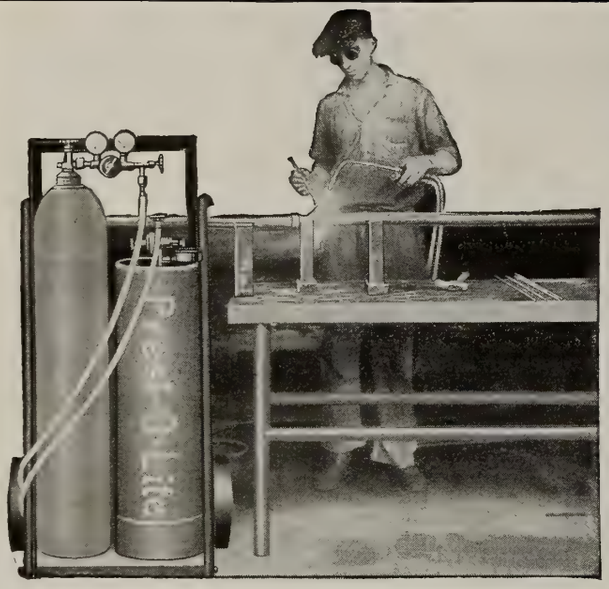
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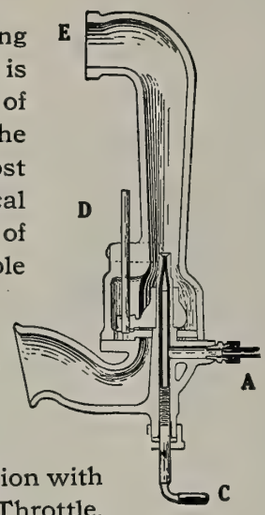
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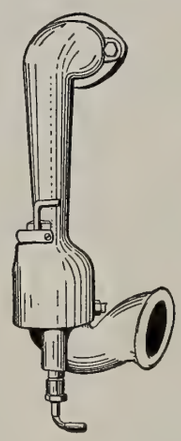
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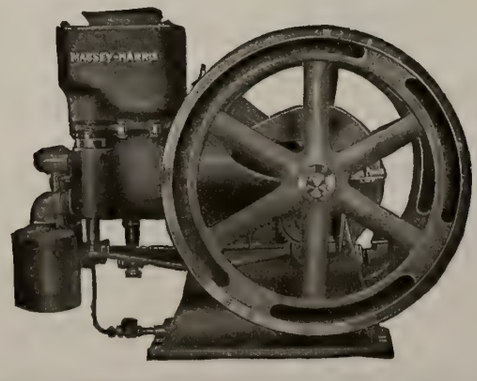
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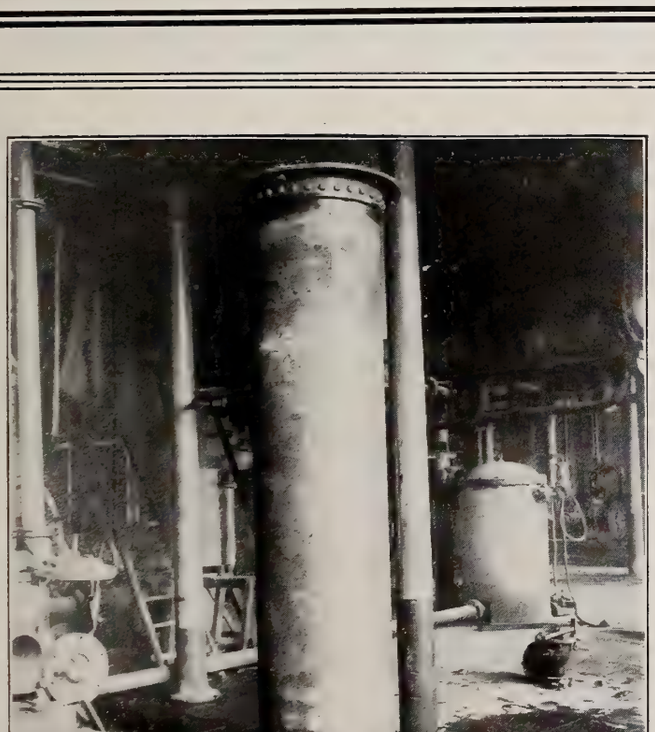
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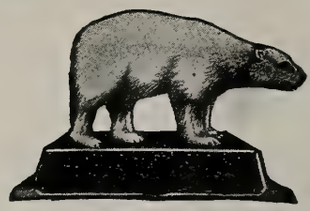
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Manufacturers in Canada of "S & C" High Potential Fuses—to 150,000 Volts

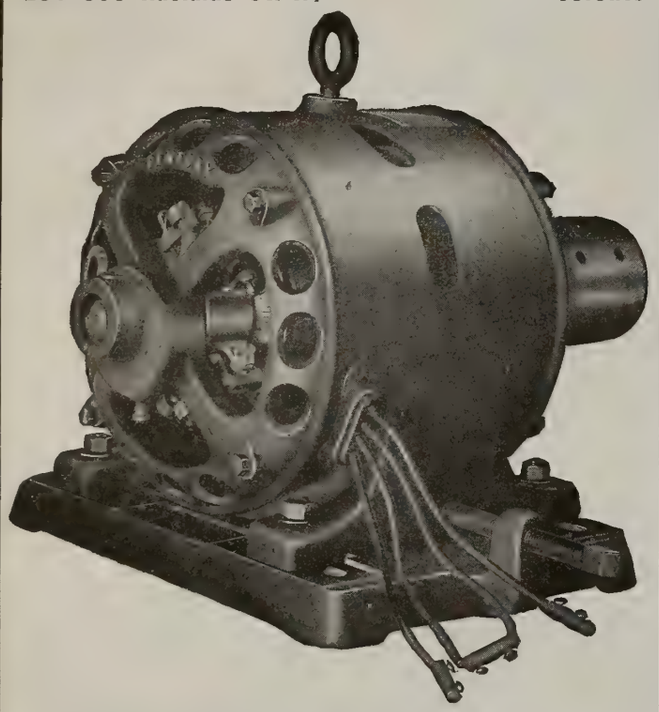


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3	10	1120	220	2	Westinghouse	CCL
2	5	1120	220	2	Westinghouse	CCL
2	5	1720	220	2	Westinghouse	CCL
1	2	1720	220	2	Westinghouse	CCL
1	2	1720	any	2 or 3	Crocker Wheeler to be wound	
3	1	1720	any	2 or 3	Westinghouse to be wound	CCL
2	10	1120	any	3	Westinghouse with Star Delta switch	CCL
1	20	850	220	3	Westinghouse	CCL
2	10	1120	220	3	Westinghouse	CCL
1	5	1120	220	3	Westinghouse	CCL
1	5	1720	220	3	Westinghouse Rewound	CCL
1	3	1720	220	3	Westinghouse	C
1	5	1720	220	3	Westinghouse	C

25 Cycle Motors.

No.	H.P.	R.P.M.	Volts.	Phase.	Make.
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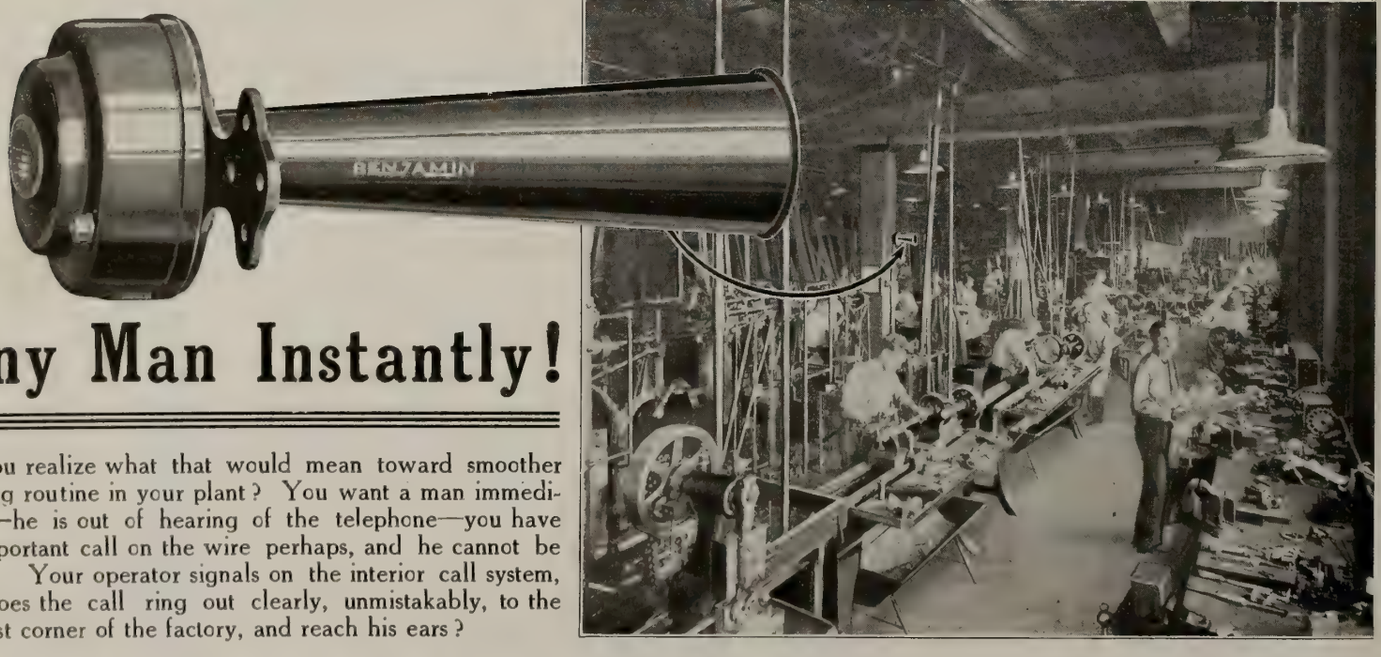
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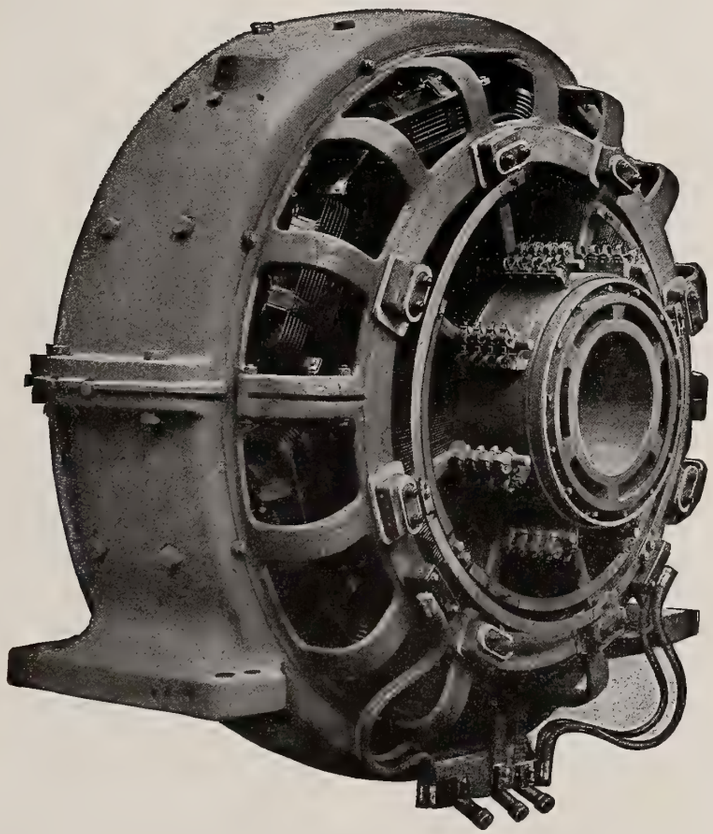
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Direct-Current, Engine-Type Generators



Careful Design of Constructional Details Mean:

Excellent Ventilation
Sparkless Commutation
Minimum Weight

Very Heavy Overload capacity from No Load with Fixed Brush Position

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Barrett Specification Roofs



This is the bond that guarantees your roof for twenty years.

Twenty Years' Service Guaranteed!

It is not an unusual occurrence to go into an enterprising Canadian city and find that most of the important buildings are covered with Barrett Specification Roofs.

And the popularity of Barrett Specification Roofs is not to be wondered at when you consider the following features:

First: Lowest unit cost per year of service.

Second: Freedom from maintenance expense.

Third: Take the base rate of fire insurance.

Fourth: And most important, we now guarantee these roofs for twenty years under the following conditions:

How to Secure the 20-Year Guaranty Bond

We are now prepared to give a 20-Year Surety Bond on every Barrett Specification Roof of fifty squares and over in all towns of 25,000 population and more, and in smaller places where our Inspection Service is available.

This Surety Bond will be issued by one of the foremost surety companies in America and will be furnished by us without charge.

Our only requirements are that the roofing contractor shall be approved by us and that The Barrett Specification, dated May 1, 1916, shall be strictly followed.

Further information and copies of The Barrett 20-Year Specification, with diagrams, free on request.

THE PATERSON MANUFACTURING COMPANY, LIMITED
MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE-PATERSON MANUFACTURING CO., LIMITED
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Architects — Hutchinson, Wood & Miller, Montreal.
Roofers — Canadian Supply & Contracting Co., Toronto

INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

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Education in Peace and War.

THE new and enlarged annual list of scholarships and prizes to be awarded by members of Toronto Branch, Canadian Manufacturers' Association, to the Central Technical School, announced at the opening of the present school session, is a splendid evidence that we are awakening to the fact that education and the things that go with and depend on education, will play a determining part in the coming economic struggle with Germany, but it must be confessed with regret that our rival has again anticipated us. Even the most convinced Germanophobe will hardly be disposed to withhold admiration for the fidelity which has here been shown to one of the best of her national traditions.

It was at the time of her deepest military and political humiliation at the hands of Napoleon I. that Prussia reformed and increased the number of her universities and laid the foundation of her public school system. Between the battle of Jena in 1806, which marked her lowest fall, and the battle of Leipsig of 1813, which saw her rise, the University of Berlin was established and that of Breslau was reorganized—the reorganization of Bonn University following only several years later—while education was made compulsory throughout the kingdom. The same faith in education as a means of national renewal has been shown during the present war. While at the call for public economy the first thought of the Government and of public authorities in this country and in the Motherland was how to save on the education estimates and the expenditure of culture generally, Germany followed the opposite course. The parish schools of Scotland, established by Knox under teachers amongst the most accomplished of their time, were an exception, and contributed to the fame of that nation as nothing else could. The efforts of many of our county education authorities have been directed towards lowering the school-leaving year, so sending the children into the labor market less than ever equipped for their life's work. Germany has rigidly adhered to the pre-war standard, already a higher one than ours, and has spared no pains to perfect her educational system still further.

But Germany is doing far more than this: it is her deliberate object, which she has been following for years, to gain a hold upon the more skilled industries. That is why it is Germany's ambition to save the most capable men —that she may become the workshop for the higher crafts and branches of manufacture, letting the rest of the world, as far as possible, do the drudgery of industry. The German eagerness for education, therefore, proceeds from sound practical as well as genuine idealistic motives.

The attempts which Germany has made of recent years to obtain control of what has been called the "Key" industries, to control the supplies of certain metals, and to capture the dyeing and finishing trades in certain important textile industries, are all part of a well-calculated scheme of which the object is to make Germans the master craftsmen and other nations mere journeymen and laborers.

Besides, the German workman in general is singularly free from prejudice against new inventions and improved appliances even when their avowed purpose is to save labor and cheapen production, for his superior education has told him that cheaper production means larger consumption. Here he owes much to the enlightened spirit of his trade union leaders, who fight fearlessly for an equal voice with the employer in fixing the conditions of labor, but never try to keep back the tide of progress as has been done so often in this country by the action of trade unionism to

the injury of labor quite as much as of capital and of the consuming public.

The profound faith of Germany in education is a fact which needs to be iterated and reiterated until the moral has been taken to heart. In what may be called the natural as distinguished from the acquired aptitudes, the Canadian is even yet superior to the German. He is on the whole more original, individual, independent and quicker to learn and adapt himself, when he is willing, to new situations. He excels, in short, in practical capacity.

The union of our native natural capacity with an education of which the human, civic and technical or occupational sides all receive rightful recognition will give to the industrial prosperity of this country a security obtained in no other way. Such a security the Scholarship Scheme of Toronto Manufacturers materially aids in furnishing.

The Duty of the Carriers.

THERE has been a good deal said during the past year in regard to co-operation between carriers and shippers, and properly so. The connection between railway business and other forms of business in this country, —the necessity of working together—is self-evident. The duty of shippers and receivers of freight is constantly being brought to their attention, and they are advised in what way they can assist in overcoming the serious car shortage which exists because of the large increase in tonnage and the fact that, according to the most careful estimates, there are less cars in the country than there were in 1914.

It has been stated in answer to the latter contention, that, whilst it may be true that there are fewer cars, the carrying capacity of the lesser number now in use exceeds that of 1914. But many of these cars cannot be loaded to their capacity. It is impossible, in many cases, under existing commercial conditions, to build up commerce to the standard of these cars, therefore calling for reasonable minimum weights under the tariffs. Notwithstanding these minimums shippers generally have responded in every way possible to the call for co-operation in loading cars, wherever possible, to their capacity.

In addition to this, conditions have been agreed to that would not have been accepted in normal times. Severe penalties have been authorized by the Railway Commission for delays in loading and unloading cars, more so than those imposed in the United States. A part of the free time allowed has been taken away. Notwithstanding the fact that these additional burdens have been assumed, the railways have, where at all possible, increased the minimums in their tariffs in some cases beyond the ability to load, and in many other ways increased their revenues.

These conditions and the increased demurrage charges have forced the public to disregard economies in the handling of their traffic. Whilst the shipping public have not seriously objected because of a realization of the situation, the question is asked, and properly so—what is being done to penalize the carriers for failure to do their duty? It would be difficult to estimate the waste during the past year or more owing to their shortcomings, due to controllable causes. What instructions have the carriers issued in regard to loading their own material to full capacity, and are they loading and unloading their coal, material and supplies with the same promptness and despatch required from the public? Are cars being placed promptly for loading and unloading and taken away immediately they are made empty? The records show that such is not the case. Are they being allowed to hold both loads and empties, especially in large terminals, in order that they may be handled in whichever way seems to them to be most economical?

Many complaints are made to the Railway Commission. These are usually turned over to one of the Commission's inspectors, who makes a personal investigation, and presumably a report, and frequently that is the last that is heard of it in so far as the complainant is concerned. Reports are also made to the Commission by the railways. On many of these complaints being investigated it is shown that the carriers themselves are entirely to blame. The records of the Canadian Car Service Bureau show that approximately ninety per cent. of all cars in public service are handled within the free time, and that a large percentage of the delays to equipment is chargeable to the carriers themselves.

It is proper to ask—What is being done to remedy this? As previously pointed out, shippers have voluntarily undertaken serious burdens, recognizing that they must do more than their share, notwithstanding what the railways do. Are the railways doing their share to meet the situation? If not, what is being done to improve the service? If the carriers are short of motor power or terminal facilities, no tariff charge can be devised to improve that situation, and better conditions cannot be brought about by penalizing the public. All concerned should recognize this. We cannot have complete co-operation unless both parties are willing to co-operate.

Employment of Children Under Age.

FROM the latest issue of the *Public Service Bulletin of Ontario,* we learn that the Department of Public Works are at present paying special attention to complaints regarding the employment of children under fourteen years of age in factories in the province, as well as to the employment of females after the hour of 6.30 p.m. Apparently quite large numbers of children under the legal age were employed during July. Several prosecutions under the terms of the Ontario Factories, Shops and Office Buildings Act were instituted, with the result that convictions were registered and fines imposed.

There has no doubt been a serious temptation on the part of some manufacturers, with labor so scarce and production needs so imperative, to wink at the exact letter of the law and enlarge their forces by taking on children

under fourteen years of age. Yet even abnormal needs are no excuse. The law is there, enacted for the physical and moral well-being of the people, and it must be observed. We believe that the manufacturers, who have been found guilty of its infraction, represent a very small minority indeed and that the rank and file are entirely in accord with the spirit of the law and are anxious to see it carried out.

The worst of the situation is, however, that the whole manufacturing class are blamed for what, after all, only concerns a very few of its less punctilious members. It is "the manufacturers," who are forcing these immature children to work. It is "the manufacturers," who are taking advantage of every opportunity to benefit themselves at the expense of the workers. The real philanthropist; the considerate employer; the law-respecting manufacturer, are all lumped in the same category and as a result we get class-hatred and all the other distressing antagonisms that arise from time to time between employer and employee.

It is true that, in all fairness, we have this condition to consider,—the deliberate attempt, not only of children, but of parents, to misrepresent ages and thus to get boys and girls started to work before the legal time. Employers know that this is of the commonest occurrence and school teachers can corroborate its far-reaching extent. A manufacturer may in the best of faith take on child labor, believing them to be of the legal age, and yet later on find that he has been deceived and is open to punishment for breaking the law. In such cases, some consideration is surely deserved.

When all is said and done, there should be the greatest care taken to avoid even the appearance of wrong-doing. In the general interests of the manufacturing industry, every manufacturer should strive to keep within the strict letter of the law. We assuredly want no complaints of the exploitation of child-labor in this country and those who stand for integrity in this direction should have the cordial support of the entire manufacturing fraternity.

A Sham Kind of Prosperity.

ONE wonders how many manufacturers are laboring under the delusion that the present so-called wave of war-induced prosperity represents a real and not a sham prosperity. If there are any such, they should read Professor Stephen Leacock's explanation of the situation, as reproduced in this number from the pages of the *Journal of the Canadian Bankers' Association,* and be disillusionized. Professor Leacock explodes the fallacy that war is profitable, or at least "far less unprofitable than had been supposed"; punctures the belief that, "when a Government borrows money from its citizens, nobody is any the richer or the poorer thereby"; and takes a whack at the theory that "the after-results of war, the very destruction itself, must lead to great business activity."

The fact of the matter is, as Professor Leacock so illuminatingly explains, that the world is burning up its accumulation of capital at an alarming rate. It is as if a man, after living within his income for a period of years and putting aside from his earnings a considerable sum of money against a rainy day, had in a moment of folly decided to "blow-in" his savings. While he was squandering his capital, life was very good, but eventually a day dawned when nothing was left and there was labor and travail ever more to be faced, if not a worse prospect.

Our manufacturers ought to grasp this fact very firmly. They, above all others, should come to a thorough realization that capital is being dissipated on the battlefields of Europe at an alarming rate. True, as Professor Leacock points out, we are producing new capital at a faster rate than ever before, but the very consideration that war debts are being piled up higher and higher, is proof that capital is being destroyed faster than it is being made.

Through the manufacturers, the workers should be reached. We hear warnings every now and then to the effect that the present high wages should be conserved against the coming of a day when employment will be more difficult to secure and returns will be lower, but that is not enough. What the worker needs to have brought home to him is that he is dancing at a holocaust; that the wealth of capital which he has been building up through years of labor is quickly vanishing and that it behooves him, as a member of the human family, to work zealously to repair the losses. It matters very little to whom the capital belongs, according to the social regulations of the time. Its advantages are shared more or less by all and all will suffer, in greater or less degree, when it disappears.

Superseding German Industry.

IT was frequently pointed out in the earlier stages of the war that one result of Germany's precipitation of the great struggle would be to inspire the Allies to establish industries which would produce commodities hitherto supplied largely, if not exclusively, by the central European powers. This process has been going on ever since the war started and in a sense has become a sort of commonplace. Less and less is being heard of these efforts to replace German products. At the same time, it is good that we should be told from time to time of progress in this direction, for on the success of present activities much will depend in the period immediately after the war. Unless the new industries are firmly and effectually established, it may be difficult to maintain them in face of restored German competition.

The *Scientific American* tells briefly of what Great Britain has accomplished. An exhibition of German and Austrian goods was held recently in the larger cities of the Midlands, and as a result, new factories will shortly be started. At Wolverhampton plants to make, on a large scale, wrought enameled hollow-ware and artificial silks

are being established. "In another part of the Midlands a brush-making machine formerly controlled altogether by the Germans is being manufactured, while a welcome stimulus has been given the glass industry, especially the making of flint glass. In the Sheffield district very important developments have been made in the heavy steel industry, and it seems that electrically melted steel from this region will play an important part in the future struggle for supremacy.

"At the beginning this boom was handicapped by the total lack of any source of tungsten supply. While military considerations make it impossible to state definitely how this deficiency was made up, we can assert that there is now an ample supply for all needs.

"In the making of dyes the British chemists are doing as well as could have been hoped for. At least one dye which the Germans were very confident could never be produced by any one but themselves is being turned out by two entirely independent British firms. An analogous triumph is the making of gelatine in sheets by a Belfast concern, in spite of the very widespread conviction that German methods here could not be duplicated. Even in the making of lenses the British both duplicated German work and evolved an improved type of lens for the special work of photographing from aircraft, which has enabled the members of the Royal Flying Corps to obtain pictures superior to any work which the enemy could execute.

"Altogether, it begins to appear that Germany was entirely too light-hearted in her assumption that her trade would be but temporarily alienated by the disturbance of the war."

Smoking During Working Hours.

IT is well worth noting that in the State of New York effort is being made to suppress the pernicious habit of smoking during work hours. The State Industrial Commissioner held a hearing this month to determine whether such a reform was desirable and could be enforced, and the Bureau of Industrial Code of the State Industrial Commission has already formulated rules on the subject, which, if approved and enforced, will make it a statutory offence, except in certain specified cases, to smoke in factories during hours of employment.

Smoking in cigar and cigarette factories will be permitted for sampling and testing purposes, only when the building is fireproofed or equipped with approved sprinkler systems. Smoking is also to be allowed in offices, sample rooms and separate rooms set apart for smoking, but such rooms must be constructed "of fireproof or fire-resisting material," and there must be an approved automatic sprinkling system in the factory.

Where the contents or products of factories are inflammable, smoking is permitted only by order of the State Industrial Commission, after the employer has made a written application for a permit and his case has been investigated. Permission to smoke in buildings where the contents are not regarded as combustible can be granted when the buildings are of approved fireproofed construction. Factories where explosives of any kind are manufactured, stored or used can get no smoking permit of any kind.

A correspondent, whose views will doubtless be cordially endorsed by many employers of labor throughout Canada, in directing attention to this move of the authorities in New York State, adds, "Smoking during working hours, apart altogether from its fire dangers, is absolutely wrong, no matter what the job is. The habit did not 'go' ten years ago. It was against everybody's rules. I think it is a socialistic development brought about by the 'business agent,' and originally suggested by the American manager. I have frequently tried to start something against the habit but everybody seems afraid of it. I have actually had the experience of being told by a business agent that some day his men would have their club and also their cigar to enjoy as they worked, and this has transpired.

"Locomotive drivers smoke on their runs; so do brakemen,—both absolutely bad, and I have no doubt but in each case accidents have happened through the effect of the distraction. Also I have seen many times bread wagon drivers handling unwrapped bread and the wet stub of a cigarette simultaneously. Painters and plumbers working on jobs in private houses have the audacity to expect to be privileged to smoke. It is an outstanding wrong that should be attacked, and I think that INDUSTRIAL CANADA might as well tackle the job."

Two-Thirds of Canada for Timber Crops.

ONE of the surprises to those visiting Europe in peace times is the method by which all lands are carefully examined and put to work according to their capacity. No farmer is permitted to locate on non-agricultural soil, and at the same time, good farming soil cannot be retained under such a crop as timber. Canada has only made a beginning at applying such a policy of business efficiency in the use of the nation's natural resources. Thousands of farmers are to-day tied to farms that produce only a few dollars an acre, their efforts and ambitions practically wasted in a time when man-power is at a high premium. Taking the whole of Canada's area, more than two-thirds will never produce field crops, and the bulk of the two-thirds will prove profitable under only one crop, namely timber.

All efforts for the protection of forests against fire and other forms of needless waste aim to keep in a productive condition those millions of acres that can never grow field crops. Canada holds a tremendous national advantage in her forests, but from the beginning of the last century about two-thirds of the original inheritance has been destroyed by fires. Nearly all modern countries have put an end to forest fires by carefully organized protective systems.

GERMANY'S TRADE AMBITIONS

By EDWARD W. REYNOLDS

BRINGING Germany to its knees means the defeat of militarism and Prussian Junkerdom; it does not necessarily mean a disaster for commercial and industrial Germany. Although this may be desired by many thousands in the allied countries, where German frightfulness has been carried on without regard for what the future may hold forth for its instigators, there are a great number of people who would not like to see a Germany bankrupt commercially and crippled industrially for many years to come, claiming that it would only be playing the Hunnish game of frightfulness, by wantonly destroying any agent of productivity. Germany has earned the enmity of the world, and generations hence will still condemn her for the part she played in this greatest of world wars.

But the study of the German mind baffles psychologists. Her continued disregard for what the world thinks is dividing students of German affairs and aspirations into two schools. One believes that her actions are the result of wanton irresponsibility, but the other contends that every move Germany makes is the result of cold-blooded calculation. This is more likely the case. Germany is heralded as the "Diplomatic Ass of Europe," but in the commercial world she is a competitor that needs watching. Her destruction of neutral shipping may be claimed as a means of frightening the small neutrals into complying with her wishes, forcing them into trade relations so that she can more successfully wage war. Be this as it may, but Germany has a more far-reaching motive. The end of the war will see a great reduction of the world's shipping, and Germany wants to be a competitor for the world's carrying trade. In this connection she naively expects the Allies to return her ships to their former owners.

Would Destroy All Ships.

By destroying all ships, allied and neutral, Germany believes that she can place herself in a better position to compete with the rest of the world, and is willing to risk the enmity of every nation, civilized and semi-civilized, to bring about the desired results. This contention is verified by the actions of Germany herself since the war was declared. After the battle of the Aisne, when the warring nations settled down to a protracted conflict, Germany, with characteristic thoroughness, prepared to systematically defeat Britain. She could only do that by a process of starvation, but she has failed, and sea-piracy has not developed other aspects. The destruction of allied and neutral ships has synchronized with the building of new freight steamers by Germany in her own shipyards. Her navy is quiescent, the building of submarines even on a large scale does not demand a great deal of space and, so far as accurate information can be obtained, twenty-eight new capacious freight steamers have been built. There is a possibility that this number has been exceeded during the past year.

Aims at a Commercial Victory.

What does Germany intend to do with these ships? She intends to transport the vast quantities of raw material, of which she has an abundance, to all quarters of the globe. Her policy of trade penetration will be carried on with merciless zeal. International antagonisms will have little effect upon her agents, who will push their sales regardless of opposition. Animosities will have the same effect upon them as water on a duck's back. Germany is already prepared for a campaign of industrial reconstruction, and the conquest of the trade markets, as is no other nation in the world. Her plans will probably be launched upon an unsuspecting world almost as soon as peace is declared. She will endeavor to offset the defeat of her military arm by an imposing commercial victory, and it behooves the commercial and industrial interests of the world in general, and Canada in particular, to prepare for a trade warfare that will be as sinister as Germany's military conflict. Germany reached commercial prosperity by stealing patents and trade secrets from other countries. Her merchants bought the most expensive articles of general use in other countries, took them to their factories and copied them, making a greatly inferior article and going back to undersell the original designer of the article in his own country. This and the "dumping" method helped Germany to oust British and Canadian merchants from very lucrative markets.

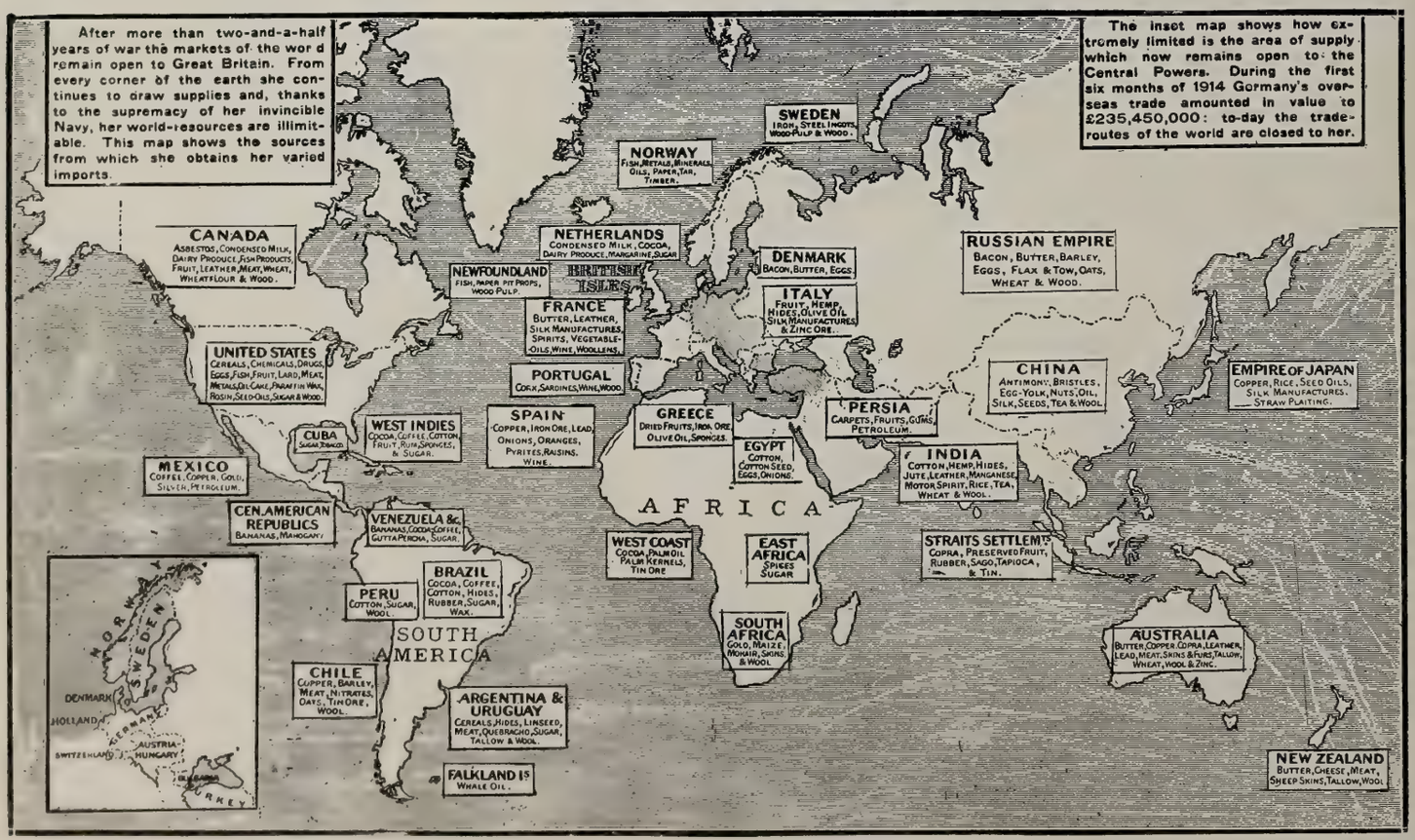
Such a case happened in Toronto just before war broke out. A certain manufacturer made card cases that sold at a fixed price, and netted him a margin of profit that just permitted him to continue manufacturing these goods. But before long a similar product appeared on the market, and the manufacturer began to lose his trade. He made investigations, and, going through the city stores, discovered what he thought to be his own article on sale. Close examination soon revealed to him that his article had been copied, but very much inferior goods had been used, while the inside revealed the famous slogan "Made in Germany." The same goods were being sold in Toronto at forty per cent. less than he could sell them, and the competition naturally forced him out of the Canadian market in this line.

Yet another instance. A Canadian photographer earned a living proceeding from city to city and town to town, taking photographs and producing picture postcards. After he had established a connection, he discovered that fairly good profits could be obtained. Soon the agents of German lithographers realized that this business, which

had been carried out to an enormous extent in Europe, could be successfully carried on in Canada, and photographers, amateur and professional, were encouraged to send films of rural and urban scenes to Germany for reproduction on postcards; smallness of quantity would be no bar to a German firm accepting the order. The result of this is that even to-day every little hamlet or country corner in established Ontario and Canada is selling picture postcards of local scenes, made in Germany. The writer knows one instance of a theological student, ordained six or seven years now, who earned his way through college to his ordination by sending scenes of Western cities and towns to Germany for reproduction.

Germany possesses great natural advantages in certain raw materials, and she will push her advantages to the limit. She will have a superabundance of supplies in a few lines on hand. Her factories at Elberfeld, Hemschied, Frankfurt and Dusseldorf have for months and years been turning out a continuous flow of articles for export. This post-war export trade organization is as scientifically organized as is war machinery. Nothing has been overlooked. If foreign bottoms cannot be obtained to convey these goods to their expected destination, her own ships will.

The Stahmer Commission, which has control of this work in Germany, works on the plan that when peace comes Germany must work on the principle of exporting goods that exceed value those included in the imports. This is calculated to create a more favorable trade balance. Germany's post-war exports will be dominantly chemicals, dyestuffs, hardware, including much enamelled articles, cutlery, and many forms of cheaper jewellery, as she has abundant quantities of raw materials on hand for the manufacture of these articles. In return Germany will endeavor to obtain copper, nickel, cotton, animal fats, and machinery. Prohibitive tariffs will be imposed upon other kinds of imports. In short, Germany is going to concentrate on the importation of cheap and bulky raw material, and flood the world with articles that can be readily sold on all markets at lower prices than what they believe home manufacturers can make them for. Germany's "war after the war," as it is succinctly described by those interested in developing Canada's home and foreign trade, will have a depressing effect upon Canada's efforts at industrial reorganization and expansion, if those in a position to do so do not bestir themselves in the interest of Canada's industrial welfare.



THE WORLD'S MARKETS THAT HELP THE ALLIES

An interesting map, reproduced from the pages of the South African "Commerce and Manufacturers' Record." It shows in a general way how the whole world is contributing to the needs of the allies, though there are some notable omissions among the products of certain countries.

DISTINCTIVE CANADIAN DESIGNS

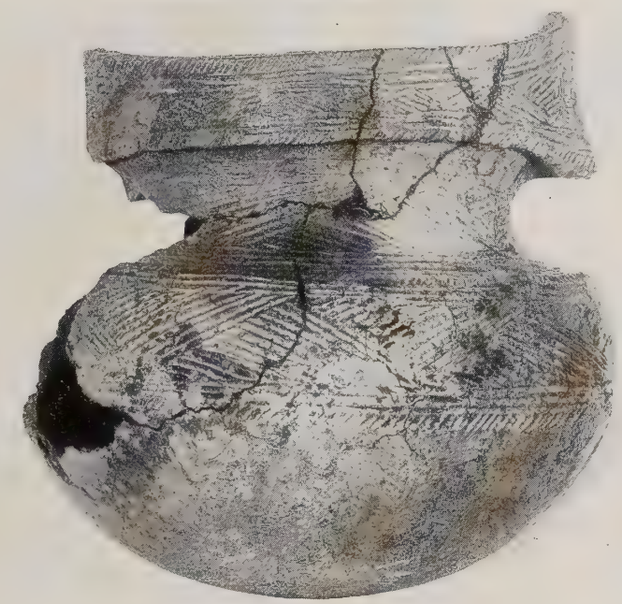
How Canadian Manufacturers May Profit by Introducing Native Designs Into Their Products

By HARLAN I. SMITH

Archaeologist, Geological Survey, Canada

FASHION constantly demands new designs of our manufacturers, but the war prevents them from getting these designs in the usual way. The manufacturers are anxious for help, and this cutting off of the supply of designs from foreign sources may lead to the development of distinctive Canadian designs, with far-reaching results in the development of Canadian trade.

In the United States five hundred million dollars is spent yearly on silk, and over four hundred and fifty million dollars worth of this silk is woven in the United States. Thirty years ago over ninety per cent. was imported. Yet, though the silk is manufactured in the United States, the designs have been almost wholly foreign. The great war cut off supplies of new designs from Europe needed to keep pace with the fashion, but through the efforts of the American Museum of National History, New York, United States designers are now producing equally pleasing patterns in their own country. They are now using Peruvian, Mexican, South-Western United States, Plains, Corean, Chinese and Siberian native designs, taken from specimens in the museum. In the United States they do not seem to be trying to develop a United States art. They are merely trying to get new designs, and only for textiles. Canada should not only get new designs, but should also be concerned with developing an art that will characterize not merely Canadian textiles, but all Canadian manufactures, and help us to hold our own with other countries after the war. In Canada the archæologists of the Geological Survey, Department of Mines, Ottawa, are taking up this work, and although the office has no facilities for making designs, nearly four hundred examples of motives for decorative and symbolic designs and trade marks have been selected for Canadian manufacturers and their commercial artists from prehistoric Canadian art and handiwork. This forms practically a complete series of prehistoric Canadian motives.



PREHISTORIC CANADIAN POT

One of the many specimens dug up about forty miles south of Ottawa in a prehistoric Iroquoian village site by Dominion archaeologists. It has given inspiration for the designing of modern Canadian pottery.

Mr. Joseph Keele, of the Ceramic Laboratory of the Department, has used some of these shapes and motives in the modelling of vases made to test Canadian clays. Many of these pottery products, after serving their purpose, were given to the Women's Canadian Club, who sold them for the benefit of the Red Cross. At the sale there was a greater call for the vases made after these Canadian motives than for any of the others.

Thirty Canadian manufacturers, representing at least nine different industries, a museum and an art school have already applied for copies of these motives. This is over twenty per cent. of those informed of the opportunity. It suggests a still larger demand, since seven of the nine requests are from seven different trades. The trades represented include even more than this if all related work is counted. They are the clay, cotton printing, cotton fabric, rug, silverware, jewelry, stencil, paper, bookbinding, designing, printing and lithographing industries. One firm desired material for a trade mark, and another manufacturer, by asking if it will be necessary to send a designer to Ottawa, signifies a considerable desire to secure these motives. Several firms have already sent representatives to look into the matter. One sent two representatives from Toronto to Ottawa. They all express themselves as surprised at the quantity and usefulness of the material, and two have already selected motives for their designers to use. One Canadian manufacturer writes that owing to the war, designing in Paris, France, is practically at a standstill, and will be until things right themselves. He is using practically the same designs that he had on hand for the last two years.

All this seems to prove that there is a demand for motives or inspiration for new and characteristic Canadian designs and trade marks. This demand we may expect to grow at the close of the war, when Canada makes special efforts to stand on an even footing with other countries in producing manufactures recognized all over the world as individually and characteristically her own.

Woman's Wear, a New York daily textile publication, took up this work vigorously in the United States, and has held two contests for designers, offering $500 in prizes, and these prizes were supplemented by hundreds of dollars offered by textile firms in crying need of designs.

The American Museum had calls from representatives of Johnson, Cowdin and Company; Mr. MacLaren, business manager, wished to see if the collections contained art motives; Mr. Jacobs, mill expert, came to see if the designs were such as could be developed on the loom; Mr. Emil Speck, the designer, came to convert the motives he saw in the museum specimens into modern designs. He is now a constant visitor to the collections. Many other manufacturers are now doing likewise. These include Cheney Brothers, Belding Brothers, John Wanamaker, Joseph Berlinger, the Central Textile Company and H. R. Mallinson and Co. The products of the work of the silk companies alone now enable United States women to utilize in the fabrics they wear the great arts of the New World; and similar results are being obtained in other textile industries, especially in the manufacture of



SOME DISTINCTIVE CANADIAN POTTERY

These vessels were made by Miss Young of the Ceramic Laboratory, Mines Branch, Department of Mines, Ottawa, to test Canadian clays. The designs were inspired by prehistoric Canadian specimens.

cotton goods and garments. The American Museum has appointed a research associate in textiles, and the Museum's efforts to call attention to the usefulness of the prehistoric motives in the Museum are resulting in designs which are now being developed and manufactured so fast that it is impossible even to keep track of them.

Progress in the United States.

The Museum has also compiled a list of artists and designers and an increasing number of young artists are receiving recognition and employment, both pleasant and profitable, as a result of this movement. Many manufacturers who buy the designs from the artists do not realize that the motives were found in Museum material. It has grown to be the habit of out-of-town retailers to include a visit to the Museum as part of their New York activities.

The aboriginal designs in the New World have already had an immense effect on designing, especially the designing of silks. The aboriginal American types of costume have also had some influence on the great costume industry in the United States; many houses in New York have been converted to the use of such sources. Some of the silks manufactured, however, are of raw metallic coloring, far inferior to the coloring of the prehistoric Indian fabrics. This is encouraging, for it shows that the prehistoric motives are good enough for the needs of the manufacturers even without the original color. The prehistoric Canadian motives at present available include no color.

The Canadian Archæological Office is also getting in touch with art and technical schools, in order to get students, designers and anyone else to develop these motives into designs for Canadian manufacturers. A good design is often worth thousands of dollars to an industry. There is every reason to believe that Canadian designers, by untiring effort, can surpass the record of service of the United States designers by developing designs and trade marks solely from Canadian motives, and supply designs not merely for textiles, but for all Canadian industries using design, and from motives that will brand the products as distinctively Canadian and help to win trade after the war.

Artists Needed.

Practical artists will understand what is wanted, and the industries have come to realize that it is to the artists of Canada that they must look for their distinctively Canadian designs. Artists who have never before been recognized by the industries may be very successful, as they were in the United States. The road to success is true ability.

The industries can absorb an indefinite number of good artists. Ideas must be continuously refreshed, and the rewards of success are open to clever persons who will give this matter their thought.

The Canadian archæological material has been selected because it supplies not only the oldest human decorative material from Canada, but material unsurpassed in distinctiveness. The fossils, animals, flowers, leaves, fruits, etc., and especially the historic objects from Indians, found only in Canada, would no doubt supply other motives capable of use, as the lotus blossom has supplied innumerable designs used throughout much of the world. These motives are so undoubtedly and intimately Canadian that they may well serve as inspiration to our designers for our distinctive decorative art. The prehistoric Canadians made little that was only artistic and not useful, such as mere bric-a-brac; yet they decorated many of their useful objects.

These motives may be used as they are, or may be conventionalized, or dissected, or multiplied, or developed in several of these ways. Designers may use them as inspiration for designs which may be applied to fronts of buildings, gargoyles, fountains, terra cotta, pottery, china, ornamental work, cast-iron railings, stoves, carpets, rugs, linoleum, wall paper, stencils, dress fabrics, lace, embroidery, neckware, umbrella handles, belt buckles, hat pins, book covers, tail pieces, toys, souvenirs, trade marks, and many other lines of work.

Drawings to be Published.

It is hoped to publish drawings of the specimens bearing these motives as soon as the drawings can be made. In the arrangement of the material each selected specimen is labelled as to what it is, where it was found, where it is now, its size, material, and, to a certain extent, with the region in which the type of motive is found. The last may be of use so that a British Columbian manufacturer, for instance, may adopt a local motive if he so desires. Some of these areas extend into the United States, as does the area of the maple leaf and the beaver; others are exclusively Canadian. Reference is made to photographs, lantern slides, and published illustrations wherever such exist. The specimens are scattered in this museum, the Provincial Museum at Toronto; Provincial Museum at Victoria; the Museum of the Natural History

Society, St. John, New Brunswick; the Provincial Museum at Halifax; the American Museum of Natural History, New York; the Museum of the University of Pennsylvania; the British Museum; and Museums in San Francisco; Florence, Italy; Berlin, Germany; and elsewhere.

Design is often evolved from or based on crude or at least primitive beginnings, and artists are always searching for a basic motive. The Japanese, for example, have succeeded in making beautiful stencils from such crude motives as bamboo, turtles and fish. The lotus blossom was variously conventionalized and widely used by the ancient Egyptians. The designs were borrowed by the Greeks, and are applied to innumerable things throughout the civilized world of to-day. This exemplifies how a single shape or design, possibly crude or primitive, may offer a source of endless usefulness in many industries throughout a wide geographical area.

It is not intended that the specimens themselves or the proposed illustrations will be used by the designers as they are, but that they will only serve as inspiration, motives, or a starting point for the artist.

Rules to be Observed.

In using these motives attention must be given to several matters: First, the artistic value of the original specimen; second, the suitability of the motive to the material and medium to be used—pottery, leather, fabric, metal, wood, cement, etc.; third, the suitability of the motive to the size, shape and use of the article to be decorated; fourth, the preservation of the original spirit of the motive; and fifth, the addition of the designer's personality as by distorting the motive conventionalizing it, just as the lotus has been conventionalized into innumerable designs, duplicating it, dissecting it, combining dissections, and various combinations of these.

It is well understood that a distinctive Canadian art cannot be selected, forced, or created except through the slow growth of the spirit of the country as developed by the individuality of its artists. But there is no harm in the Canadian manufacturer supplying his designers with motives from the first handiwork, the plant and animal life of the home soil. The simplicity and freedom of expression of the prehistoric Canadian art is what modern craftsmen most need to counteract the tendency to over-decoration, mechanical technique, mathematical monotony and lack of individuality.

Value of the Work.

In regard to the value of prehistoric New World art, hitherto considered crude, a textile expert, referring particularly to pre-Columbian South American fabrics, states that the color combinations in these fabrics is exquisite beyond description, implying a knowledge of color values as fine as the world has ever seen, and that all the decorative arts of to-day requiring the use of strong color could profit inestimably by a study of these perfect specimens. He further states that the fabrics of Peru are, beyond all question, the most interesting technical and artistic record of textile history. They are said to surpass those of Egypt and Turkestan. In Peru every process of decoration of which we know is found, every trick of the weaver's art, every skilful blending of colors. Indeed, in some of their technique and color they far surpass modern work. An artist said of one piece that if anyone could analyze the rules which governed the combinations of colors in a single design on this one prehistoric Peruvian fabric he would know more about colors and their values than does any living man. An Oriental rug expert admitted that the work of one of the Peruvian fabrics is superior to that of his samples of the best Oriental rugs. In Canada, on the Pacific coast, there is an Indian blanket generally known as the Chilcat blanket, woven from mountain goat wool and cedar bark. The weaving of this, though coarse, is perhaps the most complex and wonderful textile in the world. Certainly it surpasses anything woven on the looms of commerce.

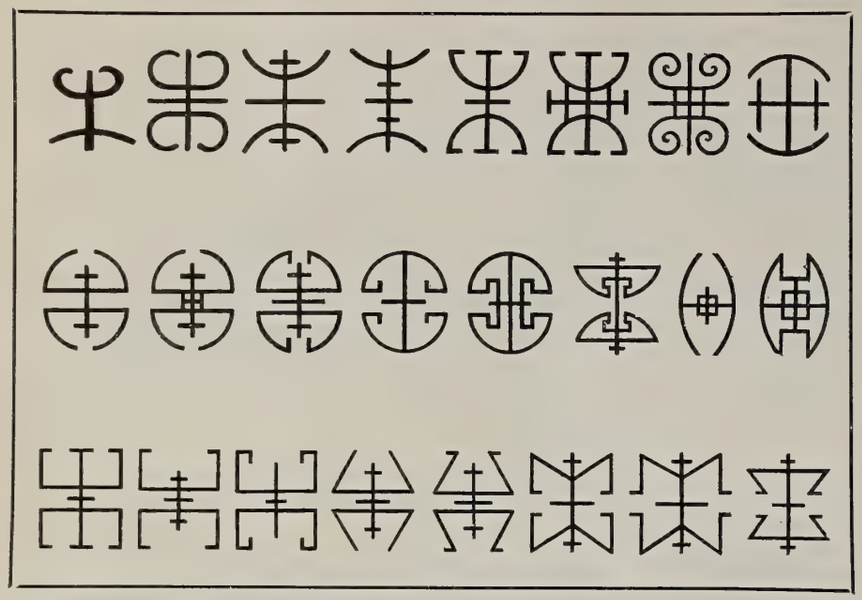
The John Wanamaker store has had an exhibit of fabrics designed from pre-Columbian Mexican designs found in the American Museum. These fabrics have also been exhibited in several other places, even as far west as Oregon.

If botanists, zoologists, students of modern Indians and others will also contribute an album of distinctive



AN OBJECT LESSON IN THE VALUE OF DISTINCTIVE DESIGN

Any one would recognize which is the Dutch tile and the Asiatic vase; pottery experts would also know the two Moorecraft vases from England. When will Canada turn out manufactures recognized all over the world as Made in Canada and just as distinctive as the Made in China and Made in Germany products?



MANY DESIGNS FROM ONE MOTIVE

A prehistoric motive from a painting on a rock in Ontario, with over twenty designs which W. J. Wintemberg developed from it. The first motive is the most difficult for the artist to secure. Then one design suggests another. Many more could be made from this single motive.

Canadian motives to the commercial artists and designers, altogether a contribution will have been made to Canadian art that may become as well known and as characteristic as Dutch art, German art, or Chinese art, and Canada may be able not only to contribute her part to the world's products of skill, but also to rise above the mere selling of unworked raw materials—hewers of wood and haulers of water—and may rather be like the modistes of Paris, who not only add to the world's beauty and joy, but also help to pay French expenses in the war by selling hats and gowns at the greatest advantage and highest price because of the exquisite French skill in design and decorative art.

Anyone can recognize a Dutch tile, an Oriental rug, or a Japanese vase. Experts can recognize English Moorecraft pottery. Paris does not need to copyright its fashions, for no one can equal them. If Canada can only copy the designs of other countries she cannot hold her own with them. Whatever we can design better than all the rest of the world will be recognized all over the world as made in Canada, and will not only develop Canadian trade, as things made in Japan and made in Germany have developed the trade of those countries, but will also contribute Canada's share to world progress and world welfare. Besides, nothing, more than music, language and decorative art unites the people of a country in mutual understanding and sympathy. Art does not reach us for good so much through the few great masterpieces in art museums as in the decorations of the objects that surround us in everyday life.

The world's decorative art will be permanently increased by the inspirational wealth of prehistoric Canadian motives. With experience our designers will make more and more of it, and we will also grow in appreciation of the results.

Art, like science and ethics, knows no limits, and it is not desirable to cater to those who desire either to limit it to political boundaries or to build up local art independently of the heritage from all peoples of all times and all places. Nevertheless, this series of motives for commercial designers must have a geographical limit, and arbitrarily it has been confined within the limits of Canada. Moreover, it is desirable that Canada, as well as Egypt, Greece, Japan and other political entities should contribute its mite to the world's art; and for Canadian emblems, trade marks and other symbolic purposes distinctive Canadian motives are desirable.

Ornamental and symbolic designs are used by over one hundred and seventy-five Canadian industries, nearly all of which are listed in the Export Directory of Canada, with the addresses of the firms engaged in each. The total of these is over eleven hundred. However, this number must be slightly reduced, since some firms engage in more than one industry.

List of Canadian Manufactures, Products and Exports, to which Characteristic Canadian Designs can be Applied with Partial List of Number of Firms in each

Architecture		Celluloid Combs	3	Art Glass	12
Art Publications	1	Cement Garden Fountains		Gold Jewellery	13
Art Squares	2	Cement Watering Troughs		Hair Ornaments	4
Art Works	2	Chairs	41	Hat Pins	
Badges	7	China	1	Indian Goods	1
Ribbon Badges	1	Clocks	6	Jewellery	32
Balusters and Bannisters	17	Minted Coins	1	Knife Handles	
Spun Zinc Balusters	1	Cornices	16	Lace	
Bank Notes	2	Cotton Goods	7	Lamps	13
Banners	4	Table Covers	4	Lead Work	1
Belt Buckles		Curtains	5	Leather Goods	
Book Covers		Chenille Curtains	2	Linoleum	2
Blankets		Lace Curtains	5	Lithographs	
Bottles		Cut Glass	3	Embossing Machinery	1
Brass		Cutlery	9	Metal Ceilings	
Bronze Work	3	Davenports	12	Neckware	
Brooches		Designing	20	Wood Mantels	20
Bulletins, for Outdoor Display	1	Dies	39	Medals and Badges	13
Bureaus	1	Brass Boss Printing Dies	3	Advertising Novelties	20
Burlaps	6	Lithographed Drafts	5	Ornamental Work	
Burnt Leather Novelties	1	Drapery	3	Ornamental Iron Work	
Button Moulds	3	Drawn Work		Compo. Relief Ornaments	1
Buttons	6	Dress Fabrics		Sheet Metal Ornaments	1
Covered Buttons	6	Society Emblems	9	Wood Ornaments	2
Crochet Buttons	3	Embossing	20	Parasols	6
Fancy Buttons	3	Embroidery	7	Picture Frames	3
Fresh Water Pearl Buttons	3	Photo Engraving	29	Tobacco Pipes	2
Vegetable Ivory Buttons	1	Fancy Goods	1	Plates for Printers' Press	2
China Cabinets	9	Flower Pots	7	Playing Cards	2
Cake Ornaments	1	Fountains		Post Cards	3
Calendars	14	Fork Handles	9	Postage Stamps	1
Playing Cards	4	Fresco Paintings	1	Pottery	5
Cast Iron Railings		Fronts of Buildings		Prints	1
Carpets	9	Furniture	69	Radiators	8
Castings		Gargoyles		Electric Radiators	2

Hot Water and Steam Radiators	9	Spoon Handles	1	Tail Pieces	
Ranges	51	Stampings	4	Umbrella Handles	9
Steel Ranges, for Household and Hotels	19	Gold and Silver Stampings	2	Umbrella Stands	2
Silk Ribbons	2	Metal Statuary	2	Band Uniforms	3
Gold Rings	3	Stencils	9	Diplomatic Uniforms	1
Cloth Robes	4	Stoves	63	Fireman Uniforms	1
Rockers	1	Gas Stoves	10	Military Uniforms	2
Ruchings	1	Summer Stoves	1	Police Uniforms	1
Rugs	10	Electric Stoves	5	Upholstered Goods	7
Knee Rugs	11	Sweaters	23	Upholstering, Leather	2
Saddles	10	Swords	1	Upholstery Hardware	1
Seals	12	Dressing Tables	5	Upholstery Trimmings	1
Wax Seals	1	Table Legs	1	Tea and Coffee Urns	3
Garden Seats	8	Tabourettes	3	Asbestic Wallpaper	1
Pressed Steel Implement Seats	1	Teapots	1	Wallpapers	11
Settees	10	Tea Urns	1	Watchcases	2
Show Cards	17	Terra Cotta	4	Watches	1
Show Cases	28	Tombstones	1	Whitewear	18
Embroidery Silks	1	Knitted Toques	9	Stained Glass Windows	6
Silverware	11	Towellings	4	Pyrographic Wood	1
Cabinets, Silverware	3	Toys	6	Engraving Wood	1
Silverware and Toilet Cases	1	Trade Marks		Woollen Goods	30
Souvenir Goods	8	Travelling Rugs	1	Total	1,107

As it may be some months before all the drawings can be made and the album of prehistoric Canadian motives can be published, the archæologists will make every effort to give, free of all expense, any practical aid that they can in the use of these motives. All this data, specimens as well as pictures, and manuscript text, is at the service of any Canadian manufacturer who desires to call at the office. Possibly photographs can be made of a few of the motives for such manufacturers as specify just what designs they would like to have. A type-written list of the books containing pictures of some of the specimens will be supplied on request.

The archæologists will do all in their power to hasten this work, and will be obliged to manufacturers if they will call or write to offer suggestions and express their needs.

THE STATUS OF DOMINION COMPANIES

Text of a Most Important Judgment Rendered Last Month in Toronto Declaring an Ontario Act to be *Ultra Vires*

By F. W. WEGENAST

IN view of its importance we publish below the full text of the judgment of Mr. Justice Masten in Currie v. Harris Lithographing Co., Ltd., and Attorney-General of Ontario v. Harris Lithographing Co., Ltd. The first of these cases was brought before the courts at the instance of the Canadian Manufacturers Association in order to test the validity of the Extra Provincial Corporations Act of the Province of Ontario in relation to trading companies incorporated by the Dominion. The Attorney-General of Ontario intervened in the first case and also brought a second action on behalf of the Province in order to insure the right to appeal. The decision is to the effect that the Act in question is *ultra vires* of the Provincial Legislature and that it is not necessary for a Dominion trading company to take out a license under the Act before carrying on business in Ontario.

It is also held that a Dominion company cannot hold land in the Province without a license from the Provincial authorities. No reasons are given for this latter decision, but it is stated that the incapacity arises, not because of the Extra Provincial Corporations Act, but because of the Mortmain and Charitable Uses Act. This latter Act is a consolidation of some old English Statutes aimed originally at the practice of religious corporations of holding lands in *Mortmain* (dead hand), whereby the feudal lord deprived of the ordinary dues which were payable on the succession of the property to the heir. By an old Canadian decision these Acts were declared to be in force in Canada, but they have never been taken seriously by Canadian lawyers and have not been practically operative.

It should be observed that the decision does not necessarily apply to all companies incorporated by the Dominion. The objects of the company in question in this case clearly identified it as a "trading" company. It may be that every manufacturing company can be similarly identified, but this should not be too implicitly assumed.

It will also be noted that Mr. Justice Masten had before him the decisions of the courts of Saskatchewan and Manitoba on similar legislation in those provinces and that his decision is unequivocally contrary to the decisions in those cases.

Judge Masten's judgment, delivered August 13, 1917, runs as follows:—

"These actions were heard before me at the non-jury sittings at Toronto on March 26th and 27th, 1917.

"They are friendly actions brought for the purpose of determining as the principal question the constitutionality of the Ontario Statute known as 'The Extra Provincial Corporations Act' in its relation to companies incorporated by Dominion authority under the Canada Companies Act, and secondly, but as an independent question, the right of a company incorporated under Federal authority to hold lands in Ontario without a license.

"Each action was heard on a Special Case agreed between the parties, and the two actions were argued together.

"At the opening of the argument Mr. Wegenast for the defendant in the second action moved summarily to dismiss it or for a perpetual stay on the ground that no such action is maintainable under Ontario procedure; in the alternative he moved by way of demurrer, or to strike out the endorsement on the writ.

"I am of opinion that section 16 (*h*) and section 20 of the Ontario Judicature Act are applicable and authorize such an action as the present, and I over-rule the objection.

"It was also noted by consent of counsel that while the second action is in form for penalties the plaintiff does not seek a money recovery but consents to remit the penalties

if he is found entitled; the sole purpose being to raise in a concrete and effective form the main question as noted above.

"On the main question, namely:

"Is the Act in question in its relation to companies incorporated under Dominion authority within the powers of the Province of Ontario. I am of opinion that the answer must be in the negative.

"The Harris Lithographing Company, Limited, is incorporated by Letters Patent under the Canada Companies Act. The Letters Patent purport to authorize it to carry on *throughout Canada* the business of dealers in stationery and also the business of lithographing, printing, engraving, embossing and manufacturing.

"Under section 5 of the Canada Companies Act, the company in question is constituted by virtue of its incorporation a body corporate and politic, and there is thereby vested in it power to sue and be sued, to contract by its corporate name and to acquire and hold personal property for the purposes for which the corporation is created (see Interpretation Act, Canada, 1906, sec. 30).

"Section 29 of the Canada Companies Act provides that on incorporation the company is to be vested with (among other things) all the powers, privileges and immunities, requisite or incidental, to the carrying on of its undertaking.

"It thus appears that there purports to be vested in the company in question power to carry on throughout Canada the business of stationers and lithographers, and I think that such power has been validly and effectively conferred on this company, because 'the power to regulate trade and commerce at all events entitles the Parliament of Canada to prescribe to what extent the powers of companies, the objects of which extend to the entire Dominion, should be exercisable.' John Deere Plow Co. v. Wharton (1915), A. C. 330. The Dominion possesses the exclusive authority to confer such powers on a company of this class, and having so conferred them the Province of Ontario has no jurisdiction to destroy them or by legislation directed at this Dominion company as such to deprive it of its status and powers.

"Turning now to the Ontario Act here in question, section 7 provides as follows:

"(1). No Extra Provincial Corporation coming within class 7 or 8 or 9 shall carry on within Ontario any of its business unless and until a license under this Act so to do has been granted to it, and unless such license is in force; and no company, firm, broker, agent or other person shall, as the representative or agent of or acting in any other capacity for any such Extra Provincial Corporation, carry on any of its business in Ontario unless and until such corporation has received such license and unless such license is in force.

"(2). Taking orders for or buying or selling goods, wares and merchandise by travellers or by correspondence, if the corporation has no resident agent or representative or no office or place of business in Ontario, shall not be deemed a carrying on of business within the meaning of this Act.

"Class 8 is defined as. 'Corporations created by or under the authority of an Act of the Dominion of Canada, and authorized to carry on business in Ontario.'

"In my opinion this section gives the key-note of the Act; its 'pith and substance' and its purpose as applied to the defendant company, is to preclude it from the exercise of some of its powers and to deprive it of its status in the Province of Ontario *unless and until* it files certain documents, pays certain fees and takes out a license.

"I am of opinion that it was not within the power of the Provincial Legislature to enact this provision (section 7) in its present form.

"However simple may be the process of procuring a license, however slight may be the delay occasioned to the Dominion Company, it is yet an illegal interference which purports for the time being (no matter how short) to prevent the company from exercising its legal powers and to deprive it temporarily of its status.

"It is attempted to support the legislation on the following grounds: (1) that it is Provincial legislation enacted under section 92 of the British North America Act with respect to licenses in order to the raising of revenue by direct taxation; (2) as legislation dealing with property and civil rights and particularly from the point of view of mortmain; (3) as legislation dealing with the administration of justice in providing for the appointment of an agent, service of process, etc.; (4) and in providing for the making of returns; (5) as legislation prescribing penalties to enforce these provisions; (6) and generally as legislation affecting property and civil rights and dealing with matters of merely local consequence. See judgment of Cameron, J., in Davidson v. Great West Saddlery Co., at p. 15.

"But while all these aspects present themselves in the Ontario Statute in substantially the same manner as in the Manitoba Act, yet they are in my opinion ancillary and supplementary to the provisions of section 7 above quoted. I think that the main purpose of the Act here in question is to assert and acquire a direct control over every company before permitting it to carry on its business in the Province; and until compliance has been yielded to the Provincial license requirements to exclude the company from the exercise within the Province of some of the powers conferred upon it by the Dominion authority. Such provisions are effective as against foreign companies but not as against Dominion companies, who are by their constituting instruments authorized to carry on their operations throughout every Province of Canada. I think that the purpose above described permeates the whole of the Act in question in such a way as to render it impossible to hold that certain sections of the Act are valid and others invalid.

"The very full argument that was addressed to me merits perhaps a more extended discussion, but all phases of the question having been elaborately discussed not only by the Privy Council in the case of the John Deere Co. v. Wharton (1915), A. C. 330, but subsequently by the Appellate Courts of Manitoba and Saskatchewan in the cases of Davidson v. Great West Saddlery Company, and Harmer v. The McDonald Company, I am unable after a careful perusal of these judgments to add anything that seems likely to assist the elucidation of the subject. I may, however, state generally, that my views accord with those expressed by Mr. Justice Perdue in the Great West Saddlery case. I do not think that the Ontario Act differs from the Manitoba Act in such a way as to yield any different conclusion from that at which he has arrived.

"The only difference to which my attention has been directed is the inclusion in the Ontario Act of sub-sec. 2, of sec. 9, which is as follows:

"'No limitation or conditions shall be included in any such license which would limit the rights of a corporation coming within class 7 or class 8, to carry on in Ontario all such parts of its business and to exercise in Ontario all such parts of its powers as by its Act or Charter of incorporation it may be authorized to carry on and exercise therein.'

"I do not find any corresponding section in the Manitoba Act, and while the clause above quoted is in some measure palliative, it does not go to the root of the difficulty in such a way as to prevent wholly that which I think to be an il-

legal interference by the Province of Ontario with Dominion legislation. I, therefore, answer the questions submitted as follows:

(a) In the Case of Currie v. Harris Lithographing Company.

(1). I am of opinion that the provisions of the Extra Provincial Corporations Act of Ontario in so far as they purport to apply to the defendant company are *ultra vires* of the Legislature of the Province of Ontario.

(2). I am of opinion that the defendant company is not precluded by reason of not being licensed under the said Extra Provincial Corporations Act from carrying out its objects and undertakings in the Province of Ontario.

(3). I am of opinion that the defendant company is not subject to the penalties prescribed by the Extra Provincial Corporations Act for carrying on business without being licensed.

(4). I am of opinion that the defendant company is incapacitated and prohibited from occupying and holding lands in the Province of Ontario, but that such incapacity and prohibition arises from the provisions of the Mortmain and Charitable Uses Act, ch. 103, R.S.O., 1914. If the defendant obtained a license under the provisions of the Extra Provincial Corporations Act it would thereby receive authority to hold lands in Ontario in accordance with provisions of section 12 of the Act in question. But the Extra Provincial Corporations Act does not by itself specifically prohibit the defendant company from holding lands, though section 7 above quoted carries with it a general prohibition.

(b) In the Case of the Attorney-General of the Province of Ontario and the Harris Lithographing Company, Limited.

(1). I am of opinion that the provisions of the Extra Provincial Corporations Act, R.S.O., 1914, ch. 179, are *ultra vires* of the Legislature of the Province of Ontario, and that none of the provisions of the said Act, as now drawn, are valid.

(2). I am of opinion that the defendant company is not precluded from carrying out its objects and undertakings in the Province of Ontario unless and until it shall have been licensed under the Extra Provincial Corporations Act.

(3). I am of opinion that the defendant company is not subject to the penalties prescribed by the said Extra Provincial Corporations Act for carrying on business without being licensed.

(4). I am of opinion that the defendant company is incapacitated from acquiring and holding lands for the purpose of its business in the Province of Ontario by virtue of the Act known as the Mortmain and Charitable Uses Act, R.S.O., 1914, ch. 103.

"I am further of the opinion that such incapacity and prohibition does not arise by reason of its not being licensed under the said Act, though if it were licensed its incapacity would be removed.

"Let judgment be entered after thirty days in accordance with the answers contained in my written reasons of judgment. No costs."

FALLACY OF WAR-TIME PROSPERITY

An Extract from an Important Article Appearing in the Last Issue of the Journal of the Canadian Bankers' Association

By PROFESSOR STEPHEN LEACOCK

IN the last issue of the *Journal of the Canadian Bankers' Association*, there appeared a lucid article from the pen of Dr. Stephen Leacock, Professor of Political Economy in McGill University, which is deserving of the widest circulation. The article bears the title, "The Economic Aspect of War." In it, Professor Leacock endeavors to clear up certain fallacious beliefs and complexities, which have been created by conditions incident to the present world-conflict and to explain some of the basic principles which have been called into play as the struggle proceeds.

The article is too extended for complete quotation but several of its paragraphs may be reproduced to advantage.

"The war," states Professor Leacock, at the outset, "has brought with it a new conception of society and of social duty. This it has done in broad, general terms,—in the abstract, so to speak,—laying down fundamental propositions without regard to ways and means. But it has done more. It has shown us in concrete form, in the shape of the war machine itself, a vast economic organization drawn to a scale never before imagined. The co-ordination of resources rendered necessary by war, the unified effort made in production, manufacture and transport, suggest boundless possibilities for a time of peace."

At the same time, "the public mind is in a sheer welter of muddlement over the economic interpretation of what is happening." . . . . "From the history of older wars and from the books of older economists, we could learn little or nothing." . . . . "As a result, a great deal of fallacious reasoning has sprung up, sprouting like weeds in the disrupted soil."

"Thus it is freely argued that even if a government raises enormous war taxes there is no burden involved, because all the money, being expended for supplies, 'comes back again into the pockets of the people.' This argument I have heard soberly advanced by one of our leading Canadian bankers, a contributor to this magazine. As with taxes, so with loans; it is argued, and the argument is a singularly plausible one, that when a government borrows money from its citizens nobody is any the richer or the poorer thereby. For if, as the result of the process, the government having borrowed one hundred dollars from John Smith is pledged to pay John Smith five dollars a year, then what is a debt to the government is an asset from the point of view of Smith. If the public debt were declared cancelled, John Smith would count himself, and quite rightly, one hundred dollars the poorer thereby, and the government would reckon itself, apart from the injury to its credit or morals involved in the repudiation, one hundred dollars the richer. The two things seem thus to cancel out, John Smith's claim to be paid exactly balancing the government's obligation to pay him. We are not speaking here, let it be repeated, of loans due to foreigners. These, quite obviously, are a debt in every sense. But loans from the citizens to their own government do appear at first sight as if the country were neither the richer nor the poorer for them. Indeed, to make the paradox still greater, the government debt itself actually figures as an asset in the computations, such as in the table above, that are made of national wealth. These are put together—mainly as a basis of tax assessments—by adding up the wealth of each individual. Thus in reckoning, as above, that the accumulated wealth of Great Britain is $80,000,000,000, there is included in the total all

the holdings of British citizens of the national debt of Great Britain. The same peculiar fallacy appears in any addition of stocks and public securities as an evidence of national wealth. All the new war debts are included therein, and, as a consequence, the more the nations borrow the greater in appearance becomes the sum total of investment and, consequently, of national wealth.

"Even these are only selected fallacies, and by no means exhaust the list. Equally perplexing is the fact—or the seeming fact—that war is "good for business." It was noted even during the time of the great war of a hundred years ago that war was good for trade. And one has only to consider the enormous profits made in shipping at the present moment, the factories running night and day and the universal demand for labor at high wages, to see that the same holds true to-day.

"Moreover, to cap the climax, it is even argued that the after-results of war, the very destruction itself, must lead to great business activity. The towns of north-eastern France must be rebuilt, the sunken ships must be replaced, the world-wide damage repaired. There is, so it seems, work for everybody and plenty of it after the war—indeed, as a consequence of the war.

War Does Not Make Wealth.

"One may well pause and take breath at such an imposing list of fallacies; for fallacies they undoubtedly are, each and every one of them. War does *not* make wealth. It does not increase trade. It does not make work. Not, at least, in the true sense that should be attached to these phrases. It only *makes wealth* in the sense that it accumulates promises to pay. It stimulates trade only in the same sense in which an auction sale of bankrupt goods may be said to make things brisk. And it *makes work* only in the same way, as a naughty child that has upset the things on the breakfast table *makes work*. The litter must be cleaned up; that is all.

"The fundamental root of all these and similar fallacies is to be found in the confusion between what are called by economists *pecuniary* and *industrial* phenomena; or, as it is expressed by plain-minded people who like simple words, between *money* and *goods*. It is a bold, if not an insulting remark to make in a Bankers' Journal, that the fallacy is one to which bankers are from the nature of their occupation peculiarly liable. They see perpetually in front of them the thing called money, or the still thinner appearance called credit, the whole mechanism of it being only the documentary evidence of the transfer, or the proposed transfer of wealth. Gold money, indeed, is wealth in any and every sense, since the bullion of which it is made is a marketable commodity with uses of its own, and the coin and bullion, as every text book in economics teaches, are interchangeable in value. But paper money is a mere document or promise, and even silver is, in our coinage system, only a token, its actual value as bullion being something between one-half and two-thirds of its nominal value in exchange. Yet this whole stock of money—gold, silver and paper—performs only a very small part, probably not more than seven per cent., of the total of business transactions. The great mass of exchanges of goods—or promises to exchange goods, is made by means of checks and deposits, bills of exchange and certificates of various sorts. All of these in the last resort are reducible to mere documentary statements.

"Any one of these things from the point of view of the individual, is wealth, since he can easily find some one who will give him real wealth—wheat, potatoes, whiskey—in exchange for it. But from the collective point of view they are not wealth at all. A bank deposit is in its essence a mere statement or promise to the effect that the bank will give John Smith a certain amount of wealth if and when he asks for it. The promise may or may not be made good. But, in and of itself, it is no more *wealth* than an order for a million dollars written by an idiot on a piece of blotting paper. Similarly a check is not wealth, but only a demand or order on someone to produce and hand over some wealth to someone else. In the same way a farm is wealth, but a mortgage is not. True, the village money-lender who owns a desk full of mortgages is accounted a wealthy man. But this on analysis merely means that he owns, in a contingent way, certain farms. If mortgages and promissory notes and such were wealth, we could all get rich with a few merry strokes of the pen.

"I trust my readers will not think that I am laboring a very simple point. Simple though it is, it clears up, if properly understood, a mass of fallacies. Thus, for example, when the great fall in stocks occurred in July and August in 1914, it was commonly spoken in financial circles as a "shrinkage of values," and it was gravely computed that so many hundred, or thousand, million dollars worth of wealth had been wiped out in a week. More absurd nonsense it is difficult to conceive. The wealth, after the "shrinkage," was just where it was before. It consisted of iron and steel, wheat and cement, railroad embankments and rolling stock, and a host of material things. These had not changed. When a culvert on the Canadian Pacific Railway is washed out, there is a destruction of wealth; but when the stock of the railway falls fifty points in five minutes there is none whatever.

"This essential distinction, then, between *industrial* and *pecuniary* phenomena runs through all our economic thinking. I have laid great stress upon it, and have attempted to reduce it to its lowest terms, because by means of it and only by means of it can we reach a proper interpretation of the economic effects of war. To do this we must disregard money and credit and documents and promises of all sorts and look only at material things; men laboring, commodities being made, transported and consumed; houses being built and houses being blown up with gun-powder; ten thousand miles of holes in the ground being dug for ten million men to crouch in; pyramids of shells being manufactured, transported three thousand miles and then exploded; huge ships of steel laboriously built and then sunk under the sea; huge iron cans filled up with explosives and floated out to sea by thousands; and more than all the awful picture of cruel wounds and torn bodies and the still faces of the unnumbered dead.

"Viewed in this way we can form only one opinion of the interpretation of war. Let the theologian or the moralist explain it as he will and fit it in, as best he may, to an explanation of the omniscient governance of the universe. The economist is bound to see in it, fundamentally, nothing but destruction.

"The moment we disregard money and monetary phenomena, and look down from above, as might an inhabitant of Mars, on the actual spectacle of men and things moving on the surface of this earth, the whole scene becomes clear to the verge of simplicity. "What are they doing?" says the Martian to his fellow as they peer through their telescopes. "Killing one another," he answers; "at least, that is their main purpose, but incidentally to it they are knocking down houses, blowing up buildings, and spending a colossal quantity of labor in producing all sorts of appliances and apparatus needed for the killing."

The Theory of War Debts.

"Seen in this light, the whole fallacy about government debts and national securities vanishes into smoke. Let us see in plain fact just what is the interpretation into terms of goods and labor of a war debt. We will take the hundred dollars mentioned above which John Smith lends to the government. In essence what happens is this. At a given moment John Smith, by industry and abstinence, has accumulated a certain quantity of goods. He may actually have in his possession the goods themselves; as in the case of an industrious farmer with a hundred cords of firewood piled up ready for use. But more likely John Smith merely has, in the form of money or a money document, an outstanding claim which can be readily cashed into goods. So that for our purposes it is all the same whether we think of John Smith as actually handing over the cordwood to the government, or merely transferring to it his money, which the government exchanges for cordwood or anything else. The government then uses the cordwood, let us say, in running a steam engine in a shell factory. It makes the shells and explodes them. The net result is that Smith's wood is burnt up. There is nothing to show for it except Smith's ownership of a hundred dollar bond of the government. But this bond, or pledge, being interpreted, is merely a promise that the government will make its citizens, including Smith, set to work at a later day to replace Smith's wood pile. That is all. The wealth meantime has vanished. The bond is only a promise. The interest is only an annual instalment of cordwood cut to replace the destroyed wood pile. Moreover, in one sense it can *never* be replaced. For if it had not been burnt up there would have been, as the result of the new labor, two wood piles instead of one. The British war debt of $19,000,000,000 is merely a statement to the effect that Great Britain has burned up and destroyed a mass of commodities represented by that sum; it now promises that the first annual charge on the labor of the country shall be to make the people devote a part of their work to making good what is destroyed; in other words, to getting back to where they were before. This

promise is about as much like an asset as the promise of a schoolmaster to his scholars that he will keep them in for an hour after school.

"With this vanishes the twin fallacy that the war taxes go back into the pockets of the people. Let us follow the tax and see where it goes. A tax being interpreted into material things merely means that the government takes from each person a certain amount of his possessions—the stored up result of his, or someone else's work. The government takes it in the form of money and expends the money on goods. The money piece, or the bankers' book entry, does, it is true, make a trip out of one pocket into another and back to a third. But the money piece is only an intermediary. What has really happened is that the goods have been taken, and these never come back. The money is merely the empty sack in which the goods were carried.

"So far, so good; or rather so bad; and there is worse to follow. For the use made of the goods borrowed or taken is to a great extent to destroy other goods. The shells are used to knock down houses, the bombs to destroy railway stations. It is as if John Smith's cordwood when taken was used to make a fire by which to destroy John Jones' household furniture.

War is Merely Destruction.

"We seem, then, to have come back to the point of view of the older economists, that war is merely destruction, though we have written it out far more elaborately than they ever saw fit to do. In fact, the older economists were *in fundamental principle* quite right. But a fundamental principle is one thing and the application of it is another. How comes it, for example, that if war is mere destruction, it brings an apparent prosperity along with it? The explanation is a perfectly simple one. War prosperity is merely the same phenomenon as that of a bee suddenly determining to eat up its store of honey; or that of a frugal man suddenly turning to a spendthrift. It means nothing else than the rapid and wasteful consumption of commodities laboriously saved. While it lasts there seems enough and for all. In a banker's phrase—which we had decided to abjure, but which exactly fits the case—it means living on capital. The government takes recklessly and gives lavishly. Everybody is either selling his labor at high wages or selling his commodities at high prices; which, being interpreted, means that as a result of the government's war finance, everybody is dipping his hands deep into the supply of accumulated goods, without making new ones fast enough to replace them. What looks like prosperity is in reality ruin. Across the false sunlight of war-prosperity there must presently fall the long shadow of the rising price of food and necessities that must, sooner or later, starve the world into peace.

"I have recently, in another place, described in the form of a simple piece of imagery the interpretation of economic prosperity in war time, and I trust I may be pardoned the seeming conceit of quoting from my own writing. I do so merely because my mind is not fertile enough to create two images where one will do.

A Fallacious Prosperity.

"'War brings with it,'*—so runs the extract of which I speak—'the peculiar phenomenon of war prosperity. This, economically, is one of the most distressing things conceivable. Here is the interpretation of it. It is as if an industrious farmer and his family had worked hard for a generation and amassed flocks and herds, barns and buildings, and good stores of provisions and grain; then, in a moment of insanity, had set to work to burn the buildings, and in the warm light of the flames kill and devour the animals, and gorge themselves with the grain and fodder, throwing the rest away. In this mad orgy one son of the family, more idiotic even than the rest, rubs his silly hands before the burning home and leers: "Father, it is warmer here and nicer, and there is more to eat, than in the old days when we worked hard and had but little food. Father, we are prosperous. We have done a good thing." Then presently the fire burns down into ashes and the night comes and the dark. And where the grain once stood and the meadows smiled in the sun, the wolves shall howl again in the gloom of the forest. And where the homestead was, there will be graves. Such is the interpretation of war.

"'The farmer and the family are the nation, and the idiotic son laughing beside the fire is the war theorist talking of the boom of trade.'

"But how, then, has it come about, if war spells destruction, and if even war-prosperity means future want, that nations have been willing to make war? How could such an essentially greedy people as the Germans have been willing to plan deliberately a war against their neighbors? If war once and for all "does not *pay*," how is it that civilized humanity, which is moved more by gain than by anything else, has not abandoned it long ago?

"Some people, indeed, before the outbreak of the present war, were of the opinion that war *had* vanished. Business was supposed to have killed it. It was assumed that henceforth there would be no wars except those conducted, for the sake of Christianity, against savages not armed with weapons of precision.

"Such as everybody remembers, was Mr. Norman Angell's thesis in his world-famous book, *The Great Illusion*, published just before the war, and sold, so it is said, to the extent of over a million copies. War, argued Mr. Angell, spells destruction. The civilized nations are so linked together by international trade, by reciprocal holdings of securities, by reciprocal loans and by the sympathetic rise and fall of exchange and market values, that the harm of each is the harm of all. No nation could make a profit out of war unless it were willing to make war after the fashion of the dark ages, making slaves of the conquered and carrying off their private property as the prize of victory. *This no nation of to-day would do.* Therefore no nation of to-day can make war with profit. And therefore no nation of to-day will make war at all.

"The glaring fault in the reasoning is patent, to-day, to a schoolboy. There *is* a nation willing to enslave and to plunder; and with this link out of the chain of argument, it snaps asunder.

The Victor May Gain Economically.

"In other words, to drop back from Mr. Angell's thesis to our argument, it may be quite true that war means as its total and final effect economic loss, and yet might mean for one of the combatants an economic gain. Our general argument above has placed together all the combatants, conquered and conquering, and looked only at the total result. If we look merely at the conquering nation, it is possible that it may gain in the economic sense: provided always, as Mr. Angell has rightly said, that it uses its victory to enslave people and pillage property. In other words, war is just as profitable as burglary; as much as that and no more. But the first condition of making a profit by it is that one must be a criminal.

"I am certain that many readers who will have assented to the general tenor of the argument above, will nevertheless feel certain obstinate doubts. If war is so economically destructive, how can it last so long? Why is it that, after three years of waste, destruction and the misapplication of labor, the nations are still on their feet, the Allies, at least, as strong as ever? Why has three years of war, involving—in living, maimed and dead—some forty million combatants alone, not precipitated an economic collapse?

"To this I must content myself with indicating and not elaborating the answer. The secret of it lies in the fact that the mobilization of the community in war time is in many ways vastly more efficient than in time of peace. Even though an enormous amount of labor is spent on destruction, the other part of it contributes more efficiently to the production of the necessities of life. In the lurid light thrown by the war on our social life and industrial methods, we are able to realize how imperfect, how wasteful, and how inefficient our peace organization has been. A vast part of our labor has been wasted on duplicated tasks; a great deal of it devoted to mere luxuries; a lot of it cancelled out of our almost universal lack of thrift. War shows us an entirely different synthesis of production in which vast operations of transport and manufacture are guided by a single control; in which waste is curtailed; thrift encouraged; in which even "gentlemen" and "ladies" are put to use; and in which the labor of women that somehow seemed frittered away among pots and pans is added as a colossal factor to the general economic productiveness of society. All of this might well be learnedly treated under some such aspiring title as War Mobilization and the Synthesis of Production; or might be set forth, fairly simply, as I hope some day to write it, under the heading, "The Organization of Prosperity."

* Quoted from "The New Era in Canada," a collection of essays by various writers, 1917, p. 414.

THREE YEARS OF TRADE EXPANSION

How Canada's Exports of Minerals, Metals and Manufactures Thereof have Increased Since the Commencement of the War

By WILLIAM LEWIS EDMONDS

THE increase in Canada's export trade under the general classification of minerals, metals and manufactures thereof since the advent of the war has been remarkable. At the close of the fiscal year 1914, when the value of the exports of Canadian production was $73,245,981, it is safe to premise that no one ever dreamed that the fiscal year 1917 would see it swell to the enormous sum of $441,137,752, a gain of 502.27 per cent! And yet that is what has actually taken place. It is almost on a par with the growth of Jonah's gourd. From the standpoint of substantiality it is better.

The extent to which the demand for material on war account has contributed to this increase is evident from the fact that of the total value, $281,220,270, was made up of munitions and explosives alone. In other words, of the total exports under the classification of minerals, metals and manufactures thereof, over 62 per cent. were munitions and explosives. Three years ago the sum total of these two lines was but $241,665, or a little less than one-third of one per cent. of all the minerals, metals and manufactures exported.

But while munitions and explosives played such an important part in the export trade of 1917, they were not the only lines which shared in the increase. As a matter of fact there were few lines in which there was not an increase. And in many of the lines in which the value was greater than in 1914 it was greater to a very marked extent.

Take, for example, iron and steel products, in which we include munitions, automobiles, and other vehicles and electric apparatus. The aggregate value of these exported was $305,122,884, compared with $15,509,723 in 1914. Here was an increase of $289,613,161, or a gain in the three years of 1,867 per cent. Under the classification of automobiles, carriages, wagons and parts there was an increase of over 258 per cent., the value of the exports being $14,397,347. In fine copper there was an increase in the three years of close to 140 per cent., the value being $22,744,825 compared with $9,489,729 in 1914.

One of the most remarkable of the increases was that under the classification of wire and wire nails. Three years ago these goods did not appear in the export figures at all. Last year, however, they stood for the substantial sum of nine millions of dollars. Machinery went up from $1,459,876 to $2,260,714, an increase of over 54 per cent. In electric apparatus there was an increase of no less than 1,171 per cent., the figures for 1917 being $1,357,824 compared with $106,816 in 1914. A still greater increase, both absolutely and relatively, was in firearms, the figures being $130,568 and $2,234,021 respectively, or an increase in the three years of 1,694 per cent. Ferro-silicon and ferro-compounds jumped from nothing to $1,755,014. Hardware, a line in which the export trade of Canada has not hitherto had much of a position, increased in the three years from $201,319 to $943,755, a gain of 319 per cent. Although manufactured asbestos still figures to an insignificant extent in the export trade, crude asbestos increased from $2,891,669 in 1914 to $4,141,968 in 1917, a gain of over 43 per cent. Exports of nickel increased by over 66 per cent. in the three years, the figures being $5,374,738 and $8,925,554 respectively. In lead there was an increase from $7,562 to $1,188,585, a gain of over fifteen thousand per cent., the largest of all proportionate increases.

The most important line in which there was a decrease in the exports during the three-year period was agricultural implements, which fell off from $7,219,520 to $3,576,124, a decline of over 50 per cent. This is, of course, due to the fact that the best customers in Europe in ante-bellum days are now participants in the war. Notwithstanding this decline, however, there is some satisfaction in the fact that the trade was larger in 1917 than it has been in any year since hostilities began, and will in all probability continue to increase. There was also a slight decline in the exports of pig iron and manufactures of tin.

The increase in the export trade under the general classification of minerals, metals and manufactures thereof was of course largely on British account. It was, however, by no means confined to that quarter, the exports to the United States and to other countries all showing substantial gains over 1914.

Exports to Great Britain increased by no less than 1,617 per cent. during the three-year period, the value being $315,423,822 compared with $18,368,864 in 1914. Those to the United States increased to the extent of 130.68 per cent., the total being $90,830,546 against $39,373,541. Grouping the exports to other countries we find them to be $33,899,997 compared with $15,396,668 in 1914, a gain of over 121 per cent. In each of these three groupings the figures were the highest on record, and particularly on British and United States account. Munitions, explosives, automobiles and other vehicles are included in these figures.

Of the exports of iron and steel and manufactures thereof, including munitions, automobiles and other vehicles, the exports to Great Britain in 1917 had a value of $264,750,000. As the total value three years ago was but $1,322,000, it will be seen that the increase during that period was 19,926 per cent. There was also a marked increase in the exports to the United States, the figures being $10,534,541 for 1917 compared with $2,016,762 for 1914, an appreciation of over 422 per cent. While the increase in the exports to other countries

The Record at a Glance

Minerals, Metals and Manufactures Thereof

1914 - -	$ 73,245,981
1915 - -	68,407,080
1916 - -	217,657,607
1917 - -	441,137,752

Iron and Steel and Manufactures Thereof

1914 - -	$ 15,509,723
1915 - -	18,372,059
1916 - -	140,513,556
1917 - -	305,122,884

was not so great as that in the case of the latter it was of a substantial character, the figures being $28,477,000 and $11,064,000 respectively, a gain of 157 per cent. One of the accompanying tables shows at a glance how the principal articles exported during 1917 were distributed on British, United States and other countries account.

For every effect there is a cause. And while the war is undoubtedly in the main the cause of the enormous expansion which has taken place in the export trade of Canada under the wide classification of minerals, metals and manufactures thereof, there are one or two other contributing factors which should not be overlooked. One is the enterprise and skill of the manufacturers of Canada. Had it not been for this the Dominion could certainly not have responded in the way it has to the demand from the Mother Country and her Allies for munitions and other supplies needed for the equipment of the army and navy. The principal articles of this kind demanded had not been hitherto manufactured in the country. And yet within a few months after the demand first came to our shores scores of factories were turning out the various articles required with a speed and an efficiency that drew forth the admiration of both the Imperial authorities and of the experts from the United States who crossed the International boundary line to investigate the methods employed by the manufacturers of this country.

The other contributing factor was the protective tariff. To explain this requires going back a little into history. And for this purpose it is not necessary to go back beyond 1887, when tariff protection to the iron and steel industry as a national policy really had its inception. Prior to that the duties obtaining on iron and steel were neither "fish, flesh nor good red herring" as far as protection in its real sense was concerned. Sir Charles Tupper, when introducing the new tariff in 1887, unhesitatingly acknowledged it. But even the Tupper tariff, while it greatly improved the duties, by no means afforded a wide and general measure of protection.

The Tupper Tariff.

It raised the duty on pig iron from $2 to $4 a ton, making it one-third below the rate obtaining at that time in the United States. Steel worth four cents and under a pound, was made dutiable at 30 per cent. The same rate was fixed for hardware, edge tools, cutlery, etc. But while that was fairly good as far as it went, the trouble was that it did not go far enough. It left steel selling for over 4 cents a pound at 12½ per cent., thus creating no encouragement for the production of the heavier descriptions. Sir Charles expressed a wish to put steel rails and wire rods on the dutiable list, but decided to defer action to a more convenient season. Seventeen years later Hon. W. S. Fielding put rails on the dutiable list, and twenty-seven years later a like act was performed by Sir Thomas White for the benefit of the manufacturers of wire rods. The latter also provided legislation for adequate protection on the heavier description of structural steel when the Government was satisfied that it was being turned out in the country. The outbreak of the war, of course, prevented the consummation of this purpose.

The fact of the matter is that the protective tariff, as far as the iron and steel industry is concerned, has never been dealt with in a masterly way. Our statesmen have been timid where they should have been heroic. If it was not timidity it was lack of vision—vision to see the importance of a well-established iron and steel industry.

The part that the iron and steel industry of Canada has played during the last three years in furthering the cause of the Allies on the battle-field ought to help strengthen weak-visioned politicians.

Even with the piece-meal and partial protection which it has enjoyed, the iron and steel industry, thanks to the courage, enterprise and resourcefulness of those engaged in it, has made remarkable progress since the first serious attempt was made in 1887 to create a protective tariff in its behalf.

When Sir Charles Tupper introduced his protective tariff in 1887, there were but four furnaces engaged in the production of pig iron, one being at Londonderry, N.S., two at Drummondville, and one at Radnor, Que. The first was the only one of importance. The aggregate production of the four was but 24,827 tons. Ontario was without a blast furnace and had been since 1854.

As the building up of an iron and steel industry is under the most favorable conditions a rather slow and tedious pro-

Principal Articles of Canadian Production Exported During 1914 and 1917

	1914.	1917.
Agricultural implements	$7,219,520	$3,576,124
Automobiles, other vehicles and parts	4,014,573	14,397,347
Munitions	13,353	240,302,414
Explosives	228,312	40,917,856
Electric apparatus	106,816	1,357,824
Asbestos	2,891,669	4,141,968
Brass, old and scrap	371,549	6,895,326
Copper, fine	9,489,729	22,744,825
Copper, old and scrap	377,012	2,064,521
Gasoline engines	88,266	133,673
Ferro-silicon and ferro-compounds.	.....	1,755,014
Firearms, all kinds	130,568	2,234,021
Hardware	201,319	943,755
Machinery	1,459,876	2,260,714
Pig iron	347,347	343,906
Scrap iron and steel	458,800	1,939,438
Iron ore	326,983	556,518
Stoves	20,618	36,925
Wire and wire nails	.....	9,038,143
Iron and steel and manufactures, not classified	968,074	25,776,213
Nickel	5,374,738	8,925,554
Tin, manufactures of	53,683	36,072
Lead, all kinds	7,562	1,188,585
Silver, metallic	20,971,538	15,870,803
Mica	208,526	431,373

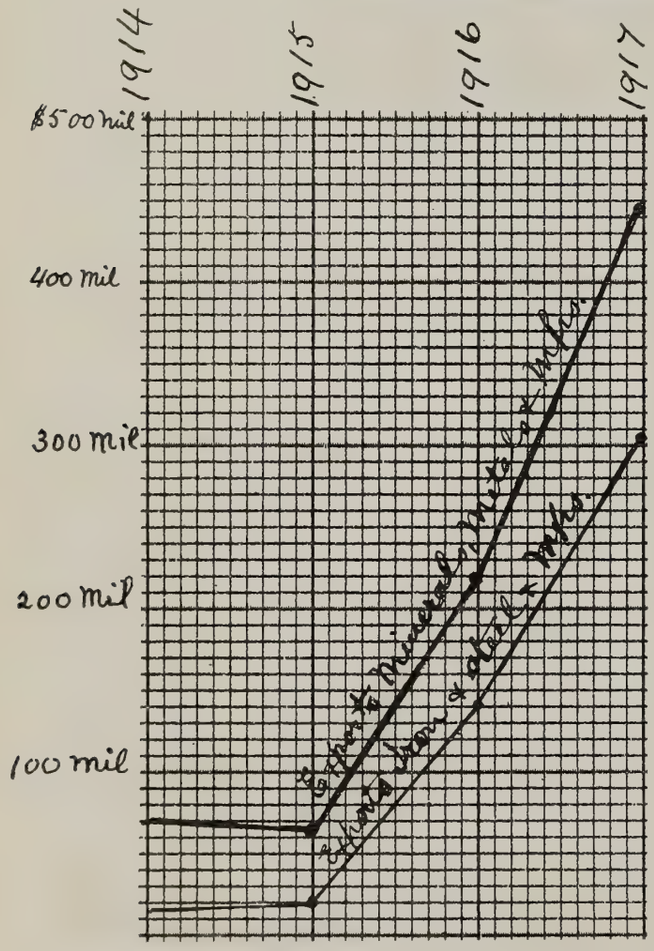
Distribution of Principal Exports in 1917

	To G. B.	To U. S.	To O. C.
Automobiles, vehicles and parts	$930,563	$213,418	$13,253,366
Agricultural implements.	594,942	227,673	2,753,509
Munitions	238,148,300	1,905,610	248,504
Explosives	30,815,956	7,543,886	2,558,000
Electric apparatus	295,259	179,212	883,000
Firearms	2,175,618	23,037	35,300
Hardware	443,343	131,713	368,000
Machinery	743,029	745,168	772,517
Iron ore	.....	556,471	47
Pig iron	.....	343,906	.....
Scrap iron and steel	467,804	1,461,659	9,975
Wire and wire nails	3,138,109	71,885	5,828,149
Unclassified iron and steel, and manufactures of	17,230,663	3,891,790	4,653,760
Lead, all kinds	.....	1,188,564	.....
Nickel	1,862,796	7,062,758	.....
Silver, metallic	10,246,242	5,123,012	501,549
Mica	47,787	381,740	1,846

cess it was not until some years later that the industry in Canada began to show material signs of development. In 1892, five years after the birth of the Tupper tariff there were but three furnaces in operation in the Dominion. Two of them were in Quebec and the third was in Nova Scotia. Production, however, had been increased to 42,443 tons.

Although there was from that year onward a steady though small increase in the production of pig iron, it was not until some years later that the industry began to get on a solid and permanent footing.

The opening of the blast furnace in Hamilton in 1896 saw Ontario for the first time in nearly forty years again em-



THE UPWARD SWING

Chart illustrating the rapidity with which Canada's exports of minerals, metals and manufactures thereof are expanding.

barked in the production of pig iron, while in the Dominion the number of furnaces in operation was increased to six and the output to 67,268 tons. To-day there are in Canada five large plants engaged in the production of iron and steel and one small plant producing charcoal iron. Four of these plants are in Ontario and two in Nova Scotia.

The production of pig iron during the last calendar year was 1,169,257 tons, an increase of 28 per cent. over 1915, and of 2,183 per cent. compared with 1887. The value of the product was $16,750,903. The steel produced was 1,454,124 tons, an increase of 42 per cent. for the year. The manufacture of steel began in 1883, but from that year until 1900 there were practically no additions to the steel furnace capacity. The output during the latter year was 87,512 tons, or less by over 93 per cent. than that of 1916, sixteen years later.

And the experiences which the manufacturers have had during the last three years place them in a much more favorable position to meet the trade exigencies which may develop when the war is over and normal conditions again obtain.

POTASH FROM KELP.

Company Formed to Operate Plant on the Queen Charlotte Islands, off the Coast of British Columbia.

It is reported from Victoria, B.C., that the International Chemical Co., Limited, with offices in Victoria, a company financed by the National Chemical Co., Limited, has practically finished the installation of machinery for the manufacture of potash on the Queen Charlotte Islands.

The potash will be manufactured from kelp, which is found in large quantities in Cumshewa Inlet, Moresby Bay, where the plant of the company is situated. The new machinery for the manufacture of potash from kelp has been installed in the buildings of the Standard Fisheries, which are close to the kelp beds.

The method of obtaining the kelp is unique. A scow passes over the beds with knives fastened beneath, which cut the kelp. After being cut it rises to the surface of the water and is gathered up. It is expected that the company will be able to handle as much as 1,000 tons of wet kelp per day.

The machinery will, however, not only be used in the manufacture of potash, but will also be used for the extraction of oils from non-edible fish, and also to make fertilizer from the fish after the oil has been extracted. The company, too, will send all edible fish which are caught to Prince Rupert for packing purposes.

Before the outbreak of the war the price of potash was $48 per ton on the Pacific Coast ports. After the outbreak of the war the price jumped to $400 per ton. At present it is $180 per ton.

REST PERIODS FOR WORKERS.

Conserving Energy in a Large Munitions Plant.

Employers of labor have found that output may be increased, not by working a man when he is tired, but by giving him an opportunity to rest. An hour's rest for the workers may literally be worth far more to the employer than the same time spent in labor.

At a large munitions factory men engaged in the heavy work of moulding are required by the management to rest fifteen minutes in every hour of work. The manager was satisfied that this was an arrangement good for the men and for the output. But the men objected to this long spell of rest in each hour, because the work was piece-work, and they thought the production would be lessened by it. The manager accordingly found it necessary to set a foreman to watch and to make the hourly rest compulsory. When this was done the output per hour was found to be actually increased.

Proper attention to rest will prevent a large part of diminished capacity from industrial fatigue, and prevent waste due to imperfect work.

A CORRECTION.

New Chairman of the Maritime Branch is President of the Enterprise Foundry Co., Sackville.

Through a regrettable oversight, Mr. W. S. Fisher, the new chairman of the Maritime Branch of the Association, was referred to in the August issue of INDUSTRIAL CANADA as president of the Record Foundry Co., Sackville, N.B. The designation should have been, president of the Enterprise Foundry Co., Sackville. The Record Foundry Co. is located at Moncton, N.B., and with it Mr. Fisher has no connection. Mr. Fisher, it might also be noted, is vice-president of Emerson E. Fisher, Limited, St. John, and Commissioner in charge of the Ross Rifle plant at Quebec.

THE FIRE HAZARD

Seriousness of the Situation in View of the Heavy Demands at Present Being Laid on Industry.

A note of warning is sounded by Benjamin Richards, chairman of the Committee on Manufacturing Risks and Special Hazards of the National Fire Protection Association, in a recent report on conditions in the United States. As Canadian manufacturers are working under much the same conditions, his remarks will have some application to this country.

The year just passed has been a most trying one for our manufacturers, states Mr. Richards. Although their prosperity in general has been unprecedented, success has been gained only by the most earnest efforts, and often by revolutionizing some methods of the industry. The scarcity of labor, delayed deliveries of machinery, unobtainable stocks and high values have called for the most skilful planning and management. Only the efficient will survive, and success in the future will not be measured, as in the past, so much by financial influences as by the ability of the management to produce reliable goods promptly and efficiently, and to operate their plants without labor troubles or other friction. Management directly affects fire losses, as inefficiency means disorder, and disorder results in fire. Outside ownership, with officers located in a distant city and only relatively low-paid men left responsible locally for the valuable mill property, has contributed to the loss of some of our otherwise well-protected plants. The best modern fire apparatus cannot save a plant from fire if the spirit of responsibility, personal interest and co-operation be absent to such an extent that the owners are interested only in dividends and the workmen in the wages received. There must be a family spirit developed between management and workers which will recognize their mutual interest in maintaining the life of the plant, its efficiency and the excellency of its product.

Additions are being made to buildings and machinery at unusually advanced costs, creating overhead charges, easily carried at present, but which may seriously involve, in the future, the integrity of the business. These evidences of prosperity need not cause anxiety in cases where the product of the plant is used in constructive work, but where war supplies and their accessories only are produced there must ultimately come a time when those particular plants will represent what is commonly called a moral fire hazard.

The development in fire protection apparatus and devices during the past few years has been very marked, but it is safe to say that the human factor necessary to their efficient maintenance has not improved equally with the apparatus. The specialization and sub-division of labor has taught it irresponsibility for the fire protection as well as other matters outside its regular line of work, and mixing fire protection too closely with the dollar saving idea in insurance contracts has tended to teach the management to forget the fire protection after closing the contract.

Value of Private Fire Brigades.

The future of fire protection, more than heretofore, calls for the independence and responsibility of the engineering work in fire protection. The paternal care given an industrial plant by the insurance interests can never replace the fire protection attainable by the interest and responsibility of the owners and employees of the plants. To this end the value of private fire brigades, care of and knowledge of the apparatus, and of adequate fencing and guarding the properties should be emphasized.

The unprepared condition of the industries for the reception of the large volume of business suddenly thrust upon them has brought out prominently the problems of replacement in case of a fire. The care of drawings, patterns, tools, extra parts, duplicate machinery and raw stocks calls for more study of storage and occupancy problems in fire protection than formerly. The unprecedented accumulations of cotton and wool in manufacturing districts during the past year illustrate the new storage conditions.

Our industrial life has been marked lately by a large growth in the ammunition and chemical plants, and without



TRIM SPECIMENS OF THE CANADIAN SHIPBUILDERS' ART

Canadian Government Fisheries Protection Cruisers in process of completion at the yards of the Polson Iron Works, Toronto. These craft are built entirely of steel and have a length of 135 feet

doubt many of them are to remain permanently, as these particular industries were somewhat neglected in this country.

Greatly advanced values of the various fibres mark the textile industries. Cotton waste and linters, especially, have reached values formerly attained only by good cotton. The diversion of cotton waste and linters to ammunition purposes has been the principal cause of the increased values, and to some extent the fire dangers of the mills have been reduced by the extra care given the waste.

The present values of all waste products tend to their better utilization, and waste industries now being built up are in general permanent, as they represent a necessary step in the economic developmnt of our industris and have a favorable influence on fire losses.

The entrance of cotton and cotton waste into the paper mills which were especially equipped to prepare cotton for nitration marked an entirely new departure, and thereby added the cotton hazards, both of storage and working, to those of the paper mill.

Without doubt our industries will be very active for some time to come, and the contents of the mills and storehouses will represent abnormal values. Beyond this period more or less of a reaction, likely to be evidenced by an unfavorable fire experience, is inevitable. Certain social and economic changes are in evidence in our industries, and it is hoped that the elimination of a large part of the unnecessary fire losses will become a part of the new growth. Efficiency in management and in labor, reasonable moderation in growth, a widening of markets, excellency of product and the planning for permanency in buildings, equipment and organization will mark the desirable industrial plant, assuming, of course, that the fire protection equipment be kept modern in every particular.

Condensed Advertising

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Good established knitting factory for immediate sale on account of owner's sickness. Apply to Box 963, INDUSTRIAL CANADA Office, Toronto.

FOR SALE.

One 100 k.v.a. 3-phase, 25 cycle, 550 volt alternator, 750 r.p.m. with two bearings, bedplate, direct coupled exciter, regulator belt pulley 24 inches dia. by 18 inches face, slide rails and foundation bolts.

One F.M. Rites patent, ideal Engine, No. 1381, 14 inches by 14 inches, style S.E., 250 rev., built by Goldie & McCulloch.

Also marble panels equipped with oil switch, voltmeter and ammeter.

Apply to Getty & Scott, Limited, Galt, Ontario.

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We have extensive acquaintance with the general trade here, and can furnish the best of references.

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42 ST. PETER ST. QUEBEC

Book Reviews

A BOOK ON TRANSPORTATION.

Inland Traffic. By Simon J. McLean, LL.B., Ph.D., Member of the Board of Railway Commissioners for Canada. Alexander Hamilton Institute, New York.

This is one of a valuable series of texts on Modern Business, prepared by the Alexander Hamilton Institute of New York. It is concerned, as the author points out, "with an analysis and explanation of some of the more important phases of Canada's transportation mechanism; the central position being given to railway transportation." As a necessary foundation for the work, Professor McLean supplies at the outset a comprehensive account of the history of Canadian transportation, together with a review of the relations existing between the government and the railways and an estimate of the facilities and equipment at present appertaining to the transportation systems. This is followed by a lucid explanation of the principles of freight classification, with special emphasis on the practice in Canada; a disquisition on freight rates in theory and in practice, with reference to influences affecting them; a chapter dealing with the interchange of traffic and one on passenger traffic in particular; and an interesting section on the moving of traffic and express services. A small portion of the book is devoted to traffic on the great lakes.

Professor McLean has approached his subject with a mind stored with practical information on the railway problem. The result has been that he has produced a volume, clear in its statements, comprehensive in its scope and accurate in its every detail. To anyone who wishes to post himself on the subject, and there must be many such in these days when the transportation question is so vitally before the public, this book can be unqualifiedly recommended.

HISTORY OF PETROLEUM.

Petroleum in Canada. By Victor Ross, Southam Press, Limited, Toronto. Price $1.00.

Mr. Ross, who is the financial editor of the *Toronto Globe*, has had exceptional opportunities to study the important subject treated in this volume. In it he has made a comprehensive survey of an extensive field. Beginning with the history of the occurrence and discovery of petroleum from the earliest times, he inserts an explanatory chapter on the theories of the origin of the substance and then proceeds to trace the history of the industry in Western Ontario. This is a picturesque chapter in Canadian industrial life and Mr. Ross treats it in most entertaining fashion. With the same light and sketchy pen he deals with the Calgary oil boom of three years ago. The occurrence of oil in other parts of Canada is covered and there are descriptive chapters on the drilling and shooting of oil wells, methods of storing and refining and products and uses of petroleum. A useful chapter gives the names and organization of the refineries and individual producers in Canada. Altogether the volume is a most valuable addition to the literature of Canadian industry.

INSVRANCE

JULY FIRE LOSSES.

A Somewhat More Favorable Showing is Made, Though the Total is Still Very High.

According to estimates compiled by the *Monetary Times*, the fire loss throughout Canada during the month of July amounted to $1,101,734, as compared with $1,184,627 during the month of June and $1,159,285 during July of last year. This brings the total Canadian fire loss during the first seven months of the year to $10,746,448. The following are the figures for the corresponding period of each of the three preceding years:—

1914	$15,530,033
1915	7,177,165
1916	11,265,802

So far, Ontario shows no likelihood of materially improving her unenviable record of last year. The Fire Marshal's Office reports that 4,839 fires were recorded in the Province during the first six months of the year, resulting in a total loss of nearly six million dollars.

Combining the figures of Canada and the United States, the losses for the first six months of the year, according to the New York *Journal of Commerce*, reached the unusually high total of $144,000,000 as compared with $125,000,000 during the first six months of 1916, and $92,000,000 during the first half of 1915.

A LEGAL DECISION.

Question as to Whether Notice of Cancellation by the Assured Renders Policy Void.

An important decision was recently rendered by the Court of Appeals of New York State. The point involved related to the question of liability of an insurance company after a notice of cancellation of its policy had been given by the insured. In the case in court, while such notice had been given, the policy had not been physically surrendered, nor had the unearned portion of the premium been returned to the policy-holder. The court held that the policy had been cancelled from the time of the giving of the notice, and that from that time the relations between the insurance companies and the policy-holder were simply those of debtor and creditor as regards the amount of the unearned premium. This decision clarifies a point as to what some have felt doubtful in the past.

THE LICENSING OF FIRE ADJUSTERS.

In Massachusetts Care is Being Taken to License Only Those Legitimately in the Business.

A law has recently been promulgated in the State of Massachusetts requiring all fire insurance adjusters to be licensed. The Insurance Commissioner is ready to issue an adjuster's license to any person who can show that he is legitimately in the business of adjusting losses, but it is not intended to license anyone about whose record as an adjuster there is any well-grounded complaint as to his competency or trustworthiness. An adjuster who is shown to have approached an assured, for example, with the inducement that he could get more from the insurance company than the damaged property was worth, or who has paid for information as to when a fire was "likely to occur," would waste time in applying for a license. Up to the date when the Act went into effect, only six persons had applied for such licenses, showing that there is a certain hesitancy on the part of those who have been following the business about applying for authority to continue it. Several localities in the United States have been troubled with fire loss adjusters who practically dealt in incendiarism. While incendiarism is by no means unknown in Canada, no case has so far come to light of connivance between the assured and an adjuster.

TAX ON UNLICENSED CLAIMS.

Ontario Fire Marshal Makes a Claim for Share of Money Collected by Quaker Oats Co.

The Ontario Fire Marshal has sent in a bill to the Quaker Oats Company for more than $6,000, as being his share of the money collected from unlicensed insurance companies in connection with the recent fire at Peterborough. The action is taken under the Ontario Fire Marshal's Act, which imposes a tax of 1 per cent. on all fire losses claimed from unlicensed insurance companies. It appears likely that the Quaker Oats Company will contest the justice of the claim, in which case most reasonably-minded men will wish them every success. The tax is highly illogical and unfair, since an assured is assessed at the very moment when he stands in greatest need of all his resources. The standard theory of taxation is to assess profits, and no honest manufacturer, sustaining a fire, can escape a net loss, irrespective of insurance money collected. The tax was ostensibly imposed to equalize the tax of one-third of one per cent. of premium income in Ontario, payable by licensed companies towards the upkeep of the Fire Marshal's Department. So large a sum has been collected direct from the assured, however, that the Fire Marshal's Department is able to rebate a considerable proportion of the taxes payable by the insurance companies. No mention has been made of any rebate of taxes paid on account of losses, so that it does not appear as though equalization had been a very important factor.

NATIONAL FIRE PROTECTION ASSOCIATION.

Some Interesting Extracts from the Report of the Committee on Manufacturing Risks.

Speaking of the Revolution which has taken place in some methods of industry during the past three years, the report says:—

Only the efficient will survive, and success in the future will not be measured, as in the past, so much by financial influences as by the ability of the management to produce reliable goods promptly and efficiently, and to operate their plants without labor troubles or other friction. Management directly affects fire losses, as inefficiency means disorder, and disorder results in fire. Outside ownership with officers located in a distant city and only relatively low-paid men left responsible locally for the valuable mill property, has contributed to the loss of some of our otherwise well-protected plants. The best modern fire apparatus cannot save a plant from fire if the spirit of responsibility, personal in-

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TRANSPORTATION

By J. E. WALSH

ANTHRACITE COAL.

President Wilson has Fixed Prices Based on Investigations as to the Cost of Production by the Federal Trade Commission.

Government control of the coal industry, under the terms of the food and fuel control law, was further extended on August 23rd when President Wilson appointed Dr. H. A. Garfield, President of Williams College, as Fuel Administrator, and also announced a schedule of prices for anthracite coal, at the mines; this in addition to the prices for bituminous coal announced on August 21st. Regulations governing the distribution of coal, which may include a regulation of the profits of retailers, are to be issued later by the Fuel Administrator, and a licensing system may be adopted. The margin of profit for jobbers was fixed in the President's order. Under the law the government may take over and operate any mine failing to observe the prescribed regulations. The price-fixing order provides that, effective September 1st, 1917, the maximum prices per ton of 2,240 lbs. on board cars at the mines for the grades and sizes of anthracite coal specified shall not exceed the prices indicated, when such coal is produced and sold by the Philadelphia & Reading Coal & Iron Company, Lehigh Coal & Navigation Company, Lehigh Valley Coal Company, Lehigh & Wilkes-Barre Coal Company, Hudson Coal Company, Delaware & Hudson Company, Scranton Coal Company, Coxe Brothers & Company, Pennsylvania Coal Company, Hillside Coal & Iron Company; Delaware, Lackawanna & Western Railroad; Delaware, Lackawanna & Western Coal Company; Susquehanna Coal Company; Susquehanna Colliers Company, Lytle Coal Company, or the M. A. Hanna Coal Company. The grades and sizes for which the maximum prices are specified are as follows:

White Ash Grade.

Broken	$4 55	Chestnut	$4 80
Egg	4 45	Pea	4 00
Stove	4 70		

Red Ash Grade.

Broken	$4 75	Chestnut	$4 90
Egg	4 65	Pea	4 10
Stove	4 90		

Lykens Valley Grade.

Broken	$5 00	Chestnut	$5 30
Egg	4 90	Pea	4 35
Stove	5 30		

Producers of anthracite coal who are not specified shall not sell the various grades and sizes of anthracite coal at prices that exceed by more than 75 cents per ton of 2,240 pounds, free on board cars at the mines, the prices enumerated; provided, that any producer of anthracite coal who incurs the expense of rescreening it at Atlantic or lake ports for shipment by water may increase the price thereof by not more than 5 cents per ton of 2,240 pounds.

Producers named shall not sell anthracite coal to producers of anthracite coal not specified.

Dealers and selling agents shall not sell coal produced by the producers named on the basis of the prices fixed at the mine for coal produced by the producers not specified.

The prices fixed are based on investigations as to the cost of production conducted by the Federal Trade Commission, which has also been conducting investigations as to the cost of iron and steel, lumber and other commodities, with a view to further regulations. They are approximately the same as have been charged by the companies after conferences with the trade commission.

BITUMINOUS COAL.

Prices Also Fixed by President Wilson for this Commodity—Schedule of Prices for Various Fields.

President Wilson in accordance with authority granted by Congress has issued the following proclamation:

WHITE HOUSE,
WASHINGTON, August 21, 1917.

The following scale of prices is prescribed for bituminous coal at the mine in the several coal-producing districts. It is provisional only. It is subject to reconsideration when the whole method of administering the fuel supplies of the country shall have been satisfactorily organized and put into operation. Subsequent measures will have as their object a fair and equitable control of the distribution of the supply and of the prices, not only at the mines but also in the hands of the middlemen and the retailers.

The prices provisionally fixed here are fixed by my authority under the provisions of the recent Act of Congress regarding administration of the food supply of the country, which also conferred upon the Executive control of the fuel supply. They are based upon the actual cost of production and are deemed to be not only fair and just but liberal as well. Under them the industry should nowhere lack stimulation.

WOODROW WILSON.

NOTE:—Prices are on f.o.b. mine basis for tons of 2,000 pounds.

	Run of Mine.	Prepared Sizes.	Slack or Screenings.
Pennsylvania	2 00	2 25	1 75
Maryland	2 00	2 25	1 75
West Virginia	2 00	2 25	1 75
West Virginia (N. River)	2 15	2 40	1 90
Virginia	2 00	2 25	1 75
Ohio (thick vein)	2 00	2 25	1 75
Ohio (thin vein)	2 35	2 60	2 10
Kentucky	1 95	2 20	1 70
Kentucky (Jellico)	2 40	2 65	2 15
Alabama (big seam)	1 90	2 15	1 65
Alabama (Pratt, Jaeger and Corona)	2 15	2 40	1 90
Alabama (Cahaba and Black Creek)	2 40	2 65	2 15
Tennessee (Eastern)	2 30	2 55	2 05
Tennessee (Jellico)	2 40	2 65	2 15
Indiana	1 95	2 20	1 70
Illinois	1 95	2 20	1 70
Illinois (third vein)	2 40	2 65	2 15
Arkansas	2 65	2 90	2 40
Iowa	2 70	2 95	2 45
Kansas	2 55	2 80	2 30
Missouri	2 70	2 95	2 45
Oklahoma	3 05	3 30	2 80
Texas	2 65	2 90	2 40
Colorado	2 45	2 70	2 20
Montana	2 70	2 95	2 45
New Mexico	2 40	2 65	2 15
Wyoming	2 50	2 75	2 25
Utah	2 60	2 85	2 35
Washington	3 25	3 50	3 00

INTERESTING PENSION SCHEME.

How a Large Financial Institution is Handling a Problem that is Becoming One of General Interest.

A number of insurance companies are now preparing pension schemes for all their employees. The latest is that of the Sun Life Insurance Company of Canada, which announces that it has adopted a pension scheme for all its office help, male and female. The plan has the double merit of simplicity and proved effectiveness. It calls for no contributions whatever from the employees themselves, the entire cost being a charge on the company. Under its terms the age for retirement is set at sixty years for women and sixty-five for men. At the age indicated an employee can retire on a pension equal to as many sixtieths of his average salary for the previous five years as he has seen years in the service of the company. Thus an employee who has reached the retiring age after thirty years of service, retires on a pension equal to one-half of his average salary during his last five years with the company. In no case will the retiring allowance amount to more than seventy per cent. of such average salary.

In addition to the pension scheme they have adopted a scheme of continuous bonuses so that every woman clerk on the completion of her first three years with the company will receive a special cash bonus of $150, and at the end of her second three years $200, and at the termination of her third three-year period with the company, $250. For each complete year of service thereafter, a bonus of $100 will be awarded.

GRAND TRUNK'S NEW PRESIDENT.

Former Chief Engineer of the System Becomes Head of the Big Railway Organization.

The new president of the Grand Trunk Railway System, Mr. Howard G. Kelley, was born on January 12, 1858, at Philadelphia. He graduated from the Polytechnic College of Pennsylvania and began railroad work in 1881 as assistant engineer on location and construction of the Northern Pacific. In 1884 he left the latter road and engaged for a time in mining. Three years later he joined the St. Louis Southwestern as resident engineer and superintendent of bridges and buildings. Two years after he was made chief engineer. On March 1, 1898, he became consulting engineer of the St. Louis Southwestern and also chief engineer of the Minneapolis & St. Louis. On July 4, 1907, Mr. Kelley was appointed chief engineer of the Grand Trunk System and on October 1, 1911, was named vice-president in charge of construction, operation and maintenance. Mr. Kelley has the reputation of being an indefatigable workers, very strong physically as well as strong in his opinions and his actions. He brings to a difficult task energy, determination and driving power.

A NEW GENERAL MANAGER.

Grand Trunk Pacific will be Administered by Experienced Traffic Man.

The Grand Trunk Pacific Railway is now under the management of Mr. W. P. Hinton, who has recently been promoted from traffic manager to vice-president and general manager, vice Morley Donaldson, retired on account of ill-health. Mr. Hinton has behind him thirty years of railroad experience. He is a native of Ottawa, born August 30, 1871, and began railway work in the auditor's department of the old Canada Atlantic in 1887. In 1891 he was promoted to be rate clerk in the traffic department. From 1898 to 1901 he was assistant general freight agent and then general freight agent until 1903, when he became both general freight and passenger agent. In 1905, when the Canada Atlantic was absorbed by the G.T.R., he became general agent in the passenger department of the latter road at Ottawa. Two years later he was appointed assistant general passenger agent at Montreal and, in 1909, general passenger agent of the G.T.P. at Winnipeg. He became traffic manager in 1915.

TARIFF

By J. R. K. BRISTOL

CUSTOMS ORDERS.

War Measures Prohibited Exports.

Under date August 20th, 1917, the Commissioner of Customs instructed Collectors of Customs that the exportation of the following goods is hereby prohibited to all destinations abroad, other than the United Kingdom, British Possessions and Protectorates, viz.:—

Tin plates and receptacles made from tin plates.

With reference to the Customs order of August 17th, 1917, which prohibits the exportation of wheat to the United States except by license, the Commissioner of Customs, under date August 21st, 1917, instructed Collectors of Customs that the exportation of wheat flour is prohibited to all destinations abroad other than the United Kingdom, British Possessions and Protectorates: Provided that licenses permitting the exportation of wheat flour to countries in alliance with the United Kingdom in the present war, may be issued under regulations by the Minister of Customs.

Under date of August 28th, 1917, the Commissioner of Customs instructed Collectors of Customs that the exportation of cast scrap iron is prohibited to all destinations abroad except the United Kingdom, British Possessions and Protectorates.

Camera Outfits for Motion Pictures.

Under date September 6th, 1917, the Commissioner of Customs instructed Collectors of Customs that camera outfits for taking motion pictures of Canadian landscapes and industrial activities may be admitted as tourist outfit, free of duty, provided that the operator from abroad makes a declaration to the satisfaction of the Customs Collector at the port of entry, to the effect that the camera outfit is for use in taking pictures of Canadian landscapes or industrial activities, and that the outfit and all the pictures taken thereby will be exported within six months from date of entry.

FOREIGN TRADE OF CANADA.

(Comparison 1915, 1916, 1917.)

IMPORTATIONS.

	Month of July.			Four Months Ending July.		
	1915	1916	1917	1915	1916	1917
Dutiable Goods	$20,765,166	$34,698,911	$49,442,400	$77,870,508	$140,233,388	$202,470,345
Free Goods	15,857,024	28,923,776	40,739,195	56,858,869	109,634,479	179,630,505
Total	$36,622,190	$63,622,687	$90,181,595	$134,729,377	$249,867,867	$382,100,850
Coin and Bullion	744,119	404,102	2,084,726	2,431,908	1,889,998	4,487,131
Grand Total	$37,366,309	$64,026,789	$92,266,321	$137,161,285	$251,757,865	$386,587,981
Duty Collected	7,431,158	11,071,100	14,241,047	28,085,471	46,063,507	60,528,788

EXPORTATIONS.

(For July).

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$5,904,544	$686,675	$8,578,750	$54,081,747	$6,365,244	$42,277
The Fisheries	2,166,857	11,071	2,570,358	1,432	2,290,327	12,697
The Forest	5,876,784	966	7,259,805	7,672	5,491,626	1,397
Animals and their Produce	10,943,628	768,388	9,546,186	135,182	19,213,497	246,377
Agricultural Products	7,676,404	928,839	38,285,309	506,875	38,744,606	394,450
Manufactures	12,441,428	425,552	38,264,136	804,979	104,649,862	1,896,641
Miscellaneous	580,393	95,191	459,726	99,453	610,986	256,533
Total Merchandise	$45,590,038	$2,916,682	$104,964,270	$55,637,340	$177,366,148	$2,850,372
Coin and Bullion	.....	13,127,009	.....	14,232,189	100,000	118,384
Grand Total Exports	$45,590,038	$16,043,691	$104,964,270	$69,869,529	$177,466,148	$2,968,756

EXPORTATIONS.

(Four Months Ending July).

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$18,405,735	$2,661,341	$26,324,915	$116,638,599	$21,539,363	$88,425
The Fisheries	4,872,188	16,112	6,146,490	8,591	5,229,545	62,903
The Forest	16,197,479	4,066	19,568,454	7,698	18,411,661	25,529
Animals and their Products	25,552,303	1,287,382	29,419,691	1,314,841	43,436,664	901,766
Agricultural Products	41,311,322	5,137,085	145,769,563	1,486,264	179,850,213	3,131,698
Manufactures	51,541,381	2,011,394	119,824,138	2,737,310	237,480,303	6,592,776
Miscellaneous	1,287,851	377,077	3,292,054	433,769	1,906,925	801,523
Total Merchandise	$159,168,259	$11,494,457	$350,345,305	$122,627,072	$507,854,674	$11,604,620
Coin and Bullion	.....	63,822,905	1,157	41,641,533	227,475	746,261
Grand Total Exports	$159,168,259	$75,317,362	$350,346,462	$164,268,605	$508,082,149	$12,350,881

PENALIZING CARELESSNESS

Great Care Must be Taken to Avoid an Accusation of Unfairness or Injustice.

Regarding the causes to which accidents are attributed I believe that carelessness is the most common.

When accidents continually occur in a department and it is seen that many or all of them could have been avoided by thought or different action of the injured person, there is a natural tendency on the part of the superintendent to classify all causes as carelessness.

Under such circumstances the foreman, who is held responsible for the accidents in his department, naturally seeks to eliminate them. He talks to his men, shows them bulletins on "Safety First," and tries to interest them in avoiding accidents. When all these efforts appear to bear no fruit and men continue to act in an unsafe way and accidents that seem preventable continue to happen, then the foreman in desperation seeks means that he thinks will bring the situation more impressively to the workman's attention. He begins to penalize the men who have accidents due to their own carelessness. When an accident occurs through a man's breaking safety rules or through his failing to observe common sense precautions, the foreman reprimands him, gives him a lay-off or discharges him, according to the degree of carelessness shown. The foreman's action is made known to the men throughout the plant by means of a notice on the bulletin board, and it seems reasonable that those who learn of this action, as well as the man punished, will receive a greater impulse toward being careful than could be produced by mere abstract teaching. It touches the workman's immediate welfare and starts thought along the line of personal safety.

So far, so good. The man has been reprehensibly careless —he is punished—his fellow workers are warned. There will be a tendency toward reasonable precaution. Repetition confirms the impression.

But now comes in the matter of judgment in classifying a workman's carelessness.

It is not difficult for a trained mind to find carelessness in some degree as the cause of nearly every accident. I mean carelessness of the injured person.

There can nearly always be pointed out a course of action that would have prevented the accident, and it is undeniably true that a greater alertness on the part of the injured in seeing dangerous positions, greater quickness in avoiding danger, more judgment in handling things, less excitement, more intense attention to the work, etc., would eliminate a large proportion of all accidents. It is equally true that some carelessness is clearly reprehensible, while other carelessness is due to an untrained state of mind—lack of education in the matter of personal safety or general obtuseness —stupidity.

It is usually an easy matter to pick out cases of real, wanton carelessness. There is no reason for hesitation in punishing these, but there are many cases where a workman cannot be made to see that his actions were contributory to the accident and that he deserves punishment.

I have seen workmen who would readily admit that they had been "fools" for getting hurt, and I have seen accidents where the foreman had no hesitation in ascribing the cause to foolish carelessness. On the other hand, I believe that accidents often occur that may be due in more or less degree to carelessness, but where the injured man would really feel that justice had miscarried if he were penalized. It would seem like adding insult to injury.

It is only reasonable to believe thae real harm will come to a cause which leaves a chance for the suspicion of unjust practices. If such occurrences are brought to the notice of workmen there is likely to be a feeling which will undo all the good that might result from the slower and surer methods of education in the line of personal safety.

Certain well defined cases of carelessness should be punished, and that the result of such action will be beneficial there is little doubt. On the other hand, great care is necessary in applying this principle to avoid cases where any suspicion of injustice may occur. The safety committee should err rather on the side of leniency than to take the risk of having the workmen criticise its motives.

This does not mean that either a safety committee or a foreman should shirk the responsibility of administering disciplinary penalties where they are deserved, but the attitude of the workmen should be considered and matters looked at from their viewpoint with a reasonable allowance made for the way it may appear to them.

A BIG INCREASE.

Exportation of Pulp from Canada Last Year Showed an Increase of Twenty-eight Per Cent.

The Forestry Branch of the Department of the Interior, Ottawa, has just issued the annual bulletin on the manufacture of pulpwood. The total value of the pulpwood made into pulp in Canada and exported for manufacture elsewhere in 1916 was nearly $20,000,000, which represents an increase of over 28 per cent. as compared with 1915. The proportion of pulpwood manufactured into pulp in Canada compared with that exported in the raw state is steadily increasing. These and other particulars of this important industry are set out in the bulletin which may be had free by any citizen interested by addressing the Director of Forestry, Ottawa, and asking for the Pulpwood Bulletin for 1916.

SEND IT IN.

If you have a bit of news, send it in.
Or a joke that will amuse, send it in.
A story that is true, an incident that's new,
"We want to hear from you," send it in.
Never mind about your style,
If it's only worth the while, send it in.
Will the story make us laugh? Send it in.
Will it make a paragraph? Send it in.
If some good your words can teach,
If some distant reader reach,
If you have a glowing speech, send it in.

TRASH MAKES FIRES.

A pile of trash that has been lying around all season is usually as dry as tinder. A spark and a little breeze are all that is necessary to start trouble.

A spark, however, is not always necessary. There is such a thing as spontaneous combustion. Lots of people don't realize that inanimate objects can set themselves on fire. A lump of sodium dropped into a pan of water bursts into flame in a few seconds. Common unslaked lime heats when it comes in contact with moisture, and wet lime has been the cause of the burning of many a lumber yard.

In piles of trash or old rags a process of decay sets in that, under certain conditions, is quite likely to produce heating, and sometimes fire. Greasy or oily rags are especially susceptible to this process. Every pile of trash and every accumulation of old clothes or rags, whether in the attic, the cellar or the yard, is a constant menace to the home. —*Safety Engineering.*

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

901. **Box Shooks.**—A company in Buenos Aires owning two large plants at present using poplar shooks made locally are prepared to consider quotations for shooks made in the sizes stated.

902. **Steel Gas Pipe.**—A Rotterdam company having offices in New York, Paris, Petrograd, Amsterdam, Den Haag, Brussels, Leeuwarden, Groningen and London wishes to buy large supplies of steel gas pipe in Canada.

903. **Metals and Metal Goods.**—A London company dealing in brass, cobalt, nickel, steel, hacksaw blades and press studs is prepared to purchase their supplies from Canada and in this connection to appoint a resident firm as buying agents upon a commission basis.

904. **Garden Tools.**—An Edinburgh firm ask to be placed in touch with Canadian manufacturers of garden tools, including spades, forks, shovels, hoes, etc.

905. **Nails and Wire Rope.**—A firm in British Guiana in the lumber trade desires to import wire nails, galvanized nails, and wire rope from Canada.

906. **Iron and Brass Bedsteads.**—A London firm asks to be placed in communication with Canadian manufacturers of iron and brass bedsteads in a position to fill export orders.

907. **Cardboard Soap Boxes.**—A London firm wishes to purchase 600,000 cardboard soap boxes according to sample in the possession of the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa, for direct shipment to South Africa, and invites quotations from Canadian manufacturers, price per 1,000 f.o.b. Canadian steamer for South Africa, or preferably c.i.f. Durban, cash against documents in Canada.

908. **Nails, Tacks, and Machinery.**—A Boston commission house having connections in Turkey, Persia, China, Russia, India, Africa and Arabia, wishes to secure Canadian supplies of nails and tacks and would like to get into touch with Canadian manufacturers of machinery.

909. **Pulp-board or Pulp for Making Mounts.**—One of the leading photographic supply houses in Australia desires to receive samples, and f.o.b. steamer quotations, of pulp-board or pulp suitable for making mount boards.

910. **Machines, Tools and Materials.**—A French concern which is erecting large works for the manufacture of locomotives and railway materials wishes to secure supplies of machines, tools and materials from Canada.

911. **Trunks.**—A firm in Demerara selling trunks invites correspondence from Canadian manufacturers.

912. **Harness and Leather.**—A firm in Demerara wishes to be put in touch with Canadian manufacturers of harness and leather.

913. **Soaps and Perfumes.**—A firm of druggists in British Guiana inquires for soaps and perfumes.

914. **Saw-mill Plant.**—An important company having a large amount of capital invested in Zanzibar, wishes to secure from Canada a saw-mill plant to cut about 10,000 feet a day. The plant must include boiler and engine and all machines to turn out lumber dressed four sides, with saws, knives, etc., and spare parts to provide for wear and breakage. Also a shingle machine to cut 16-inch, 18-inch and 20-inch shingles.

915. **Dowels.**—A Birmingham firm wishes to hear from exporters of dowels.

916. **Tinned Goods.**—A St. John's firm is open to receive quotations from Canadian manufacturers on tinned meats, vegetables, fruits, evaporated apples, and pickles in glass.

917. **Wrapping Paper.**—A firm in Rheims, temporarily in Paris, wishes to get in touch with manufacturers of wrapping paper.

918. **Box Shooks.**—A South African firm of distillers asks for quotations on supply of about 27,500 boxes annually. Full particulars and specifications may be had on application to the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa. (File 17786.)

919. **Spools and Bobbins.**—The managing agents of nine jute mills in Calcutta, India, wish to get supplies of bobbins and spools in Canada. Samples have been received at the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa.

SEE PAGE 667

920. **Birch Squares.**—A large bobbin manufacturing firm in Yorkshire wishes to be placed in touch with Canadian manufacturers of birch squares cut in lengths of 2 feet, 2½ feet, 3 feet, 3½ feet and 4 feet, 75 per cent. being 4 feet long. The sizes of the squares are 1 inch by 1 inch, 1⅛-inch by 1⅛-inch, 1¼-inch by 1¼-inch, 1⅜-inch, and 1½-inch by 1½-inch.

921. **Box Shooks and Excelsior.**—A London firm ask to be placed in correspondence with Canadian manufacturers of box shooks suitable for fresh and dried fruits and canned goods, for shipment to South Africa. Quotations f.o.b. Montreal. The same firm also desire to hear from Canadian manufacturers of excelsior.

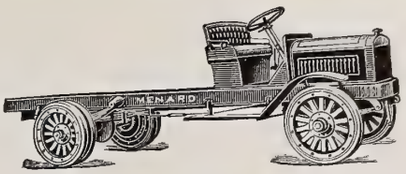
922. **Cobalt, Oxide, etc.**—A firm of chemical merchants at Manchester wishes to get in touch with Canadian manufacturers and exporters of oxide of nickel and cobalt, and molybdic acid.

923. **Iron and Steel, Piping, Wire Nails.**—A Johannesburg firm with branches in four principal centres are prepared to take up representation of Canadian agencies in any of the above lines.

924. **Box Shooks.**—A Cape Town firm of sweet manufacturers ask for quotations on box shooks in two sizes in sets of 1,000 and 500 each. The sizes required are:

Box A.—23 inches long, 13 inches high, 7 inches wide, inside measurement. Thickness: Ends, 11-16 inch; rest of box, 7-16 inch. Shipment of 1,000 boxes.

Box B.—8 5-16 inches wide, 14 inches high, 24 inches long, inside measurement. Thickness: Tops and bottoms, ⅜ inch; sides, ½ inch; ends, ⅝ inch. Shipments in sets of 500 boxes.



The
Menard Motor Truck
is
MADE IN CANADA

Every owner of a MENARD
is a booster for the MENARD

Write for catalogue and prices

Menard Motor Truck Co., Ltd.
Windsor - Ontario, Canada

SAVE ENERGY—
CONSERVE MAN-POWER—
ELIMINATE WASTE MOTION

There's one sure, proven way of conveying ***your product*** from point to point—it's the Mathews way.

They require no power, are noiseless and durable. They can be installed anywhere—are for every business that embodies the movement of merchandise and raw material.

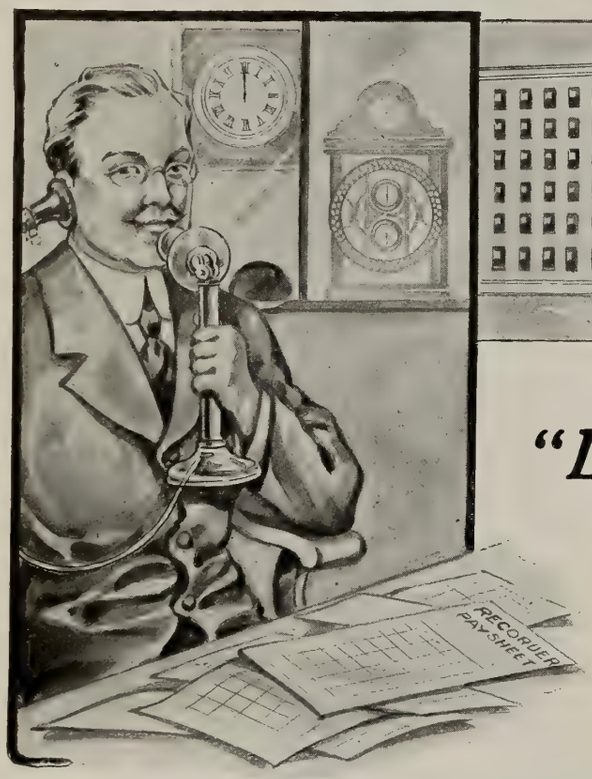
What are your conveying problems—we can solve them—economically—positively?

Our sales engineer will be around your way soon. He'll call at "your say so." Your name on your letterhead will fetch you interesting facts in booklet form about conveyers as they interest you.

Factories at—
Toronto, Ont.
London, Eng.
Ellwood City, Pa.

Your Branch—
484 Richmond St. West, Toronto, Ont.

SPEED — The MATHEWS WAY — CARRIER COMPANY LIMITED — ECONOMY — The SAVING WAY — GRAVITY — CANADIAN MATHEWS





"Listen in" on this Telephone Conversation

Yes, we certainly increased our profits last year.

How did you do it?

Well, for one thing, I changed my time recording system.

What do you mean?

Well, we now get the original pay-roll entry PRINTED BY THE EMPLOYEE HIMSELF. We also get the absolute time each job was started in the shop and the time it was finished.

That so? Well, what does it mean to you?

Say—it meant nearly a fortune. For now we know positively and accurately from figures that *cannot be changed* the difference between our expense labor and our productive labor, which latter has increased over 25% owing to the new system.

What do you mean—new system?

Why, the new system put in by the International Time Recording Co.

Oh, I see—well, I'll bet it cost you a fortune.

Yes it did—the years we did without it, for it's the most expensive thing in the world to be WITHOUT.

The International Time Recording Co. of Canada, Limited

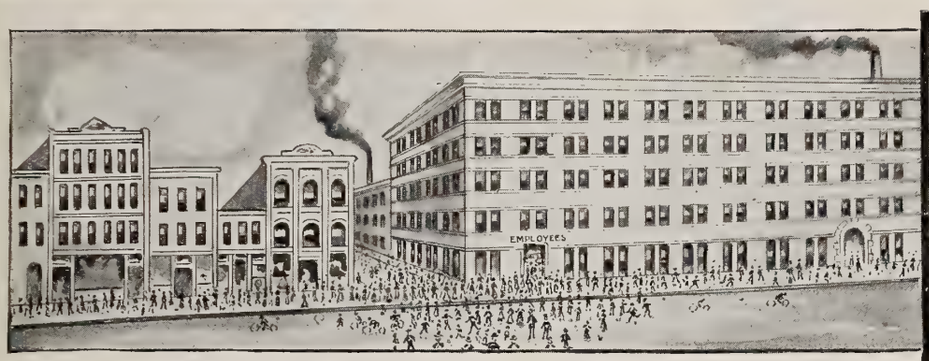
Anderson St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG:
227-231 McDermott Avenue

VANCOUVER:
624 Birks Building
(Opposite C.P.R.)

MONTREAL:
Cartier Building,
McGill and Notre Dame Sts.

INTERNATIONAL TIME SYSTEMS





Is This Man Speaking for YOU?

How did the new system affect your Foremen?

Bully! It made them realize what the Big Leak meant.

Big Leak—I don't get it.

Well, I mean the old method of recording the men's time with book and pencil was—well, not reliable! There's where the Big Leak came in strong, as has been most amply proved when we put the new System in.

How do the men like it?

Fine! They know that the recorders play no favorites and they're bound to be right. There hasn't been a pay-time kick around here since I don't know when.

How about letting me see how that new System works?

All right—you're on. Slip over now.

He "Slipped"—he saw—he bought—he plugged another Big Leak in his own business. Why not let ***us*** tell you about it, too?

The International Time Recording Co. of Canada, Limited

Anderson St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG: 227-231 McDermott Avenue

VANCOUVER: 624 Birks Building (Opposite C.P.R.)

MONTREAL: Cartier Building, McGill and Notre Dame Sts.

925. **Handles.**—A New Zealand firm wishes to secure supplies of axe, hammer, scythe, pick, shovel, etc., handles. They have a strong connection in New Zealand and wish to obtain Canadian wooden goods in this line. They would also be glad to hear of Canadian manufacturers of wringers who wish to extend their business to New Zealand. Prices should be f.o.b. Vancouver.

926.—**Stockinette Meat Wraps.**—One of the principal meat-packing firms and largest exporters in Australia will give Canadian quotations, on the basis f.o.b. steamer at shipping port, or preferably c.i.f. principal Australian ports, on stockinette wraps for mutton, lamb and beef, very sympathetic consideration. Samples can be seen at the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa.

927. **Steel Nails.**—A Paris importer desires to get in touch with manufacturers of steel nails and other kinds.

928. **Gallon Apples.**—A Glasgow importer in a position to obtain the necessary import license wishes to receive quotations on the above.

929. **Stitching Wire.**—A Glasgow firm of basketmakers, who buy the above, 18 to 22 gauge, in 10 to 20 ton lots, wishes to get into touch with Canadian exporters with a view to post-war business.

930. **Leather.**—A Leicester firm is open to represent manufacturers of sole and upper leather, chrome leather and lining leathers.

931. **Press Buttons and Glove Fasteners.**—A Leicester firm is open to represent a manufacturer of press buttons and glove fasteners.

932. **Machinery.**—A Leicester firm wishes to hear from manufacturers of brush-making machines and laundry machinery, with a view to representation.

933. **Machine Tools.**—A Leicester firm is open to represent a Canadian manufacturer of machine tools.

934. **Machine Tools.**—An old established British firm in Moscow, Russia, wishes to purchase in Canada machine tools required for works under construction for war purposes. Specifications will be furnished on application to the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa.

935. **Box Shooks.**—A Cape Town firm of merchants want quotations on box shooks, annual requirements about 400,000 boxes, different sizes. Full particulars on application to Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa.

Old Tyme Pure Maple Syrup

AND

Maple Butter

SOLD EVERYWHERE

Maples Limited

Manufacturers and Refiners

TORONTO CANADA

CANADIAN COLLAPSIBLE TUBE CO., Limited

MANUFACTURERS OF

"Premier" Pure Tin, Plain and Decorated Collapsible Tubes

381 ADELAIDE ST. WEST - - - TORONTO

RIDOUT & MAYBEE

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59 YONGE STREET, TORONTO

"CRANES MADE IN CANADA"



ELECTRIC TRAVELING CRANES

HAND POWER TRAVELING CRANES

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NORTHERN CRANE WORKS, LIMITED - - - WALKERVILLE, ONTARIO

THREE FACTORY BUILDINGS

FOR SALE OR LEASE

FACTORY NO. 1:—Three stories, modern mill construction, floor space 15,000 sq. feet, light on all sides; adjacent to railway tracks, forge shop in rear, equipped with steam heating plant, elevator, wired for power and light. Suitable for metal working industry.

FACTORY NO. 2:—Two stories and basement, situated on railway siding; steam heating equipment, modern engine; wired for power and light, elevator, light on all sides; floor space 15,000 sq. feet. Has a large lumber shed and dry kilns adjoining. This building suitable for woodworking industry.

FACTORY NO. 3: — Two stories, floor space 11,000 sq. feet; steam heating equipment, elevator, wired for power and light; suitable for light manufacturing industry.

For further particulars, etc., apply

Secretary

BOARD OF TRADE

WOODSTOCK, ONTARIO

PETERBOROUGH
ONTARIO, CANADA

The Manufacturer in Peterborough has many advantages. He connects directly with the G.T.R. and C.P.R., and by canal with all principal Waterways. He has abundant cheap electricity. He draws for his labor from a population of 24,000 industrious, home-loving people. Peterborough is the town worth living in, having all City advantages with fine country surrounding, excellent educational facilities and very moderate living expense.

FINEST LOCATION IN CANADA FOR MANUFACTURERS

Hydro-Electric power is developed on the Otonabee River, and connecting Waters, by a system owned by the City, and rates are low. Peterborough has been notably free from labor troubles, and our Manufacturers have had no trouble in procuring labor of all classes. Labor costs less than in the larger Cities.

CENTRE OF POPULATION
EXCELLENT TRANSPORTATION FACILITIES

If Transportation charges are an important part of your manufacturing problem, Peterborough will interest you. It has direct railway connection with all big Centres, being situated between Montreal and Toronto.

There are over 60 factories, the largest employing about 2,000 hands. It is the civic policy to encourage manufacturers, and the city is reserving for new comers a number of very desirable manufacturing sites. For further particulars, write, wire or telephone—

THE CITY CLERK, Peterborough, Ontario, Canada

KEGS HALF-BARRELS BARRELS DRUMS

SEND us a sample order as an experiment, and you will be impressed with the shortcomings of the old-fashioned wooden barrel.



The Smart-Turner Machine Co., Limited

HAMILTON, CANADA

PROVIDE a man with good tools and you will get good results.

In files—give him one or other of the "Famous Five."

They are hard and sharp—consequently the mechanic does good work with the minimum of labour.

And that's a desirable result for all concerned.

Specify "Famous Five" when ordering.

They are:



Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Calgary.

Work is now under way in East Calgary preparing for the construction of the large mill of the Alberta Flour Mills, Limited. The structure will be one of the largest of its kind in the Dominion, and will cost when completed in the neighborhood of $1,500,000.

Edmonton.

The Swift-Canadian Company are erecting a $5,000 brick addition to their plant.

Medicine Hat.

The Imperial Oil Company plans erection of a plant and service station.

BRITISH COLUMBIA.

Anyox.

The Granby Consolidated Mining, Smelting and Power Company plan erection of coke manufacturing plant at a cost of about $1,500,000.

Copper Mountain.

The Canada Copper Company, owner of the B.C. Copper Company, plans erection of a concentrating mill of 3,000 tons daily capacity. The improvements include hydro-electric power installation and a 12-mile railroad spur from Princeton, B.C. Estimated cost, $2,000,000.

New Westminster.

The Imperial Munitions Board plans to establish an assembling plant here.

Vancouver.

C. B. Oliver, of Salt Lake City, Utah, who represents the United Filters Company, the American Filter Company and the Kelly Filter Press Company, is considering the establishment of a plant in this vicinity to manufacture filters for mining, and also for sugar refining, or the perfecting of arrangements for some existing machine shop to extend its plant to make the filters.

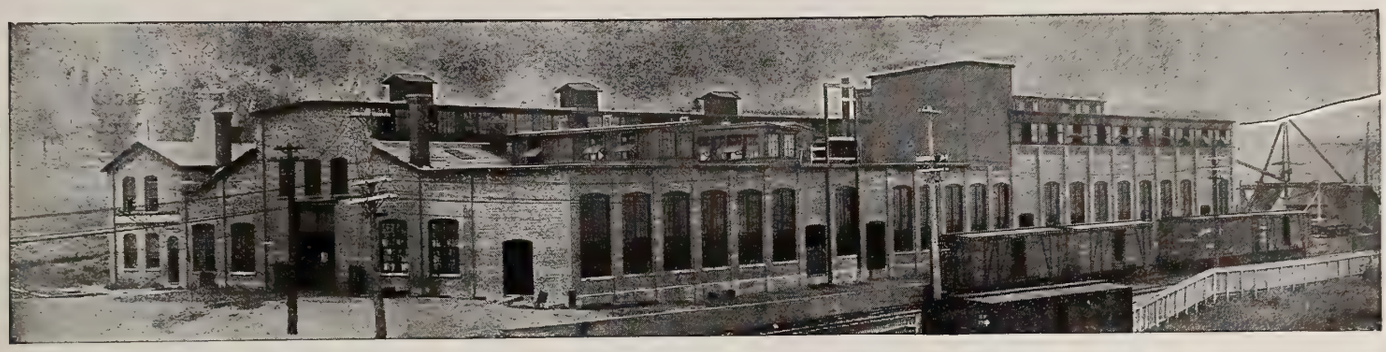
Announcement is made that the Schaake Mfg. Co., Limited, which was established many years ago in New Westminster, will be removed to Vancouver. The company intends operating a modern shop and machinery representing an investment of about $75,000 will be installed. Construction of the necessary buildings has started and when completed employment will be given to sixty to seventy-five mechanics. It is expected that considerable marine work will be handled. The plant will be located on the Vancouver Harbor Board's industrial island in False Creek.

The Pacific Metal and Galvanizing Company, Seattle, may establish a plant here. The estimated cost is $35,000.

STRUCTURAL STEEL WORK OF EVERY DESCRIPTION.

BUILDINGS BRIDGES PENSTOCKS ROOF TRUSSES COLUMNS, ETC.

TANKS



TOWERS

Main Plant of MACKINNON, HOLMES & CO., LIMITED, SHERBROOKE, QUE.

T H-E

Get Your Lamps Now

Have a man go round and examine your lamps. You'll find it pays—some of them are probably burnt out or burnt down to a point of inefficiency. Thing to do is to buy your lamps now—Hydro's stock is big and good. Get them in before the rush and before they are actually needed—so saving a possible waste of time which means money.

Toronto Hydro-Electric System

226 Yonge Phone Adel. 2120

Chemical Fire Engines

For Factory–Village–City. Capacities 20, 40, 50, 70 Gal.

OUR "JUNIOR" 40 GAL. ENGINE WITH MANY IMPROVEMENTS OVER THE ORDINARY TYPE, SELLS AT $150.00

The R. S. BICKLE COMPANY

WINNIPEG MONTREAL QUEBEC ADDRESS ENQUIRIES TO HEAD OFFICE, WOODSTOCK



HIGH-CLASS
MADE-IN-CANADA

AIR COMPRESSORS

Send us your inquiries

HAMILTON MOTOR WORKS, LIMITED
HAMILTON CANADA

LINK-BELT

Elevators and Conveyors for Every Purpose

WE SELECT the type of elevator or conveyor to suit the individual requirements. Our line covers the entire range of approved appliances for the efficient and economical handling of materials.



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Our Toronto Works and Warehouse



EWART LINK-BELT

Designed for general industrial work—elevating, conveying and power transmission.

A variety of attachments is made, adapting Ewart Link-Belt to the individual requirements of practically every industry.

This is the >——< Mark of Quality. It appears on every Link-Belt manufactured by us, and is your guarantee of reliability in material, workmanship, inspection and service.

Write for General Catalog No. 110, which illustrates the entire Link-Belt line. Submit your problems in elevating, conveying and power transmission to us for solution.

Manufacturing Plant and Offices

CANADIAN LINK-BELT CO., LTD.

265 WEST WELLINGTON ST.
TORONTO

A permit for the construction of an addition to the boiler house of the B.C. Sugar Refinery, at a cost of $9,000, has been taken out by the Taylor Engineering Company.

Victoria.

The Whalen Pulp and Paper Company, which is engaged in establishing a large industrial plant on Vancouver Island, at the new town of Port Alice, near the head of the Southeast Arm of Quatsino Sound, will lay down two keels at a time and will keep on building ships until it has enough of them to handle its export trade.

MANITOBA.

Winnipeg.

Fire, originating from combustible material, broke out in the premises of the Oribo Manufacturing Co., Limited, on August 26th, and did damage to the stock and building of $3,000. This was fully covered by insurance.

Fire totally destroyed the building of the Gold Medal Furniture Company at Gunnel St. and Henry Ave., with an estimated loss of $50,000.

Contract has been let for the erection of a solid brick mill building at the corner of Sutherland and Higgins Ave., also for the machinery and equipment. The undertaking will be under the management of G. D. Brundit, for many years with the Lake of the Woods Milling Co., Limited.

NEW BRUNSWICK.

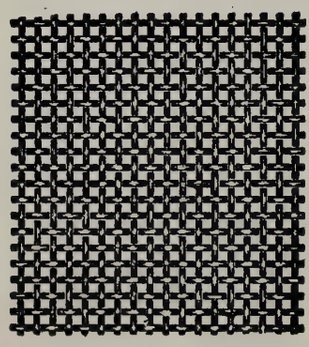
Moncton.

Humphreys' Glass, Limited, will enlarge their plant.

Plans are being prepared for a $15,000 brick factory addition for the Atlantic Underwear Company, Church Street.

Canada Wire & Iron Goods Co.

HAMILTON - - CANADA



Manufacturers of Double Crimped Wire Cloth and Wire Screening for all purposes of Iron, Brass, Copper, Bronze, Galvanized and Tinned Wire, etc.

There is no kind of Wire Fabric required in the production of any machine or manufactured article that we cannot furnish.

We also manufacture:—

Bank and Office Grilles and Ornamental Iron Work in all finishes.

Wire Guards for Factory Windows, Moulders' Riddles, Laboratory Testing Sieves, Steel Factory Stools and Metal Lockers.

Send for Catalogue — Enquiries Solicited

STEEL BARS

ROUNDS, SQUARES, FLATS, ANGLES AND SPECIAL SECTIONS FOR AGRICULTURAL IMPLEMENTS

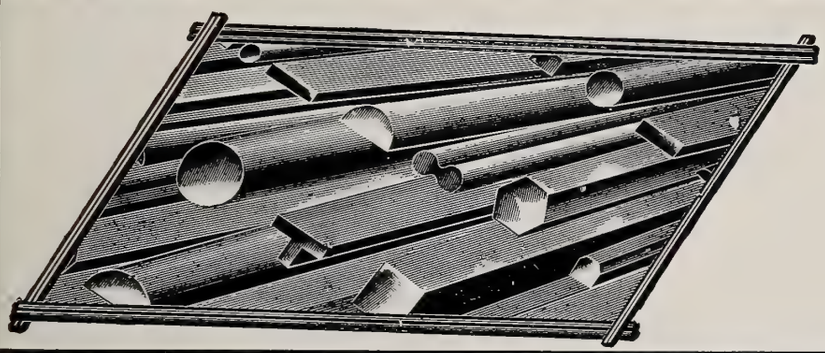
Prompt Shipment from Stock

BURLINGTON STEEL CO., Ltd.

HAMILTON - CANADA

UNION DRAWN STEEL CO., Limited

HAMILTON, ONTARIO



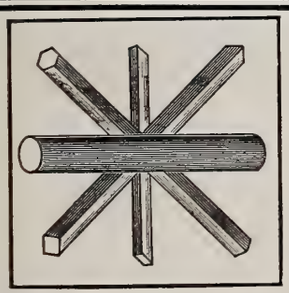
MANUFACTURERS OF

Shafting

Rounds, Flats, Squares and Hexagons

LARGEST STOCK IN CANADA

Get prices before ordering elsewhere.



COLD DRAWN, TURNED AND POLISHED STEEL

SHAFTING

ROUNDS, SQUARES, HEXAGONS AND FLATS

$\frac{1}{8}$ in. to 6 in. Dia. $\frac{1}{4}$ in. to $2\frac{1}{4}$ in. $\frac{1}{4}$ in. to $2\frac{1}{4}$ in. up to $1\frac{1}{2}$ in. x 3 in.

FREE CUTTING SCREW STOCK PISTON AND PUMP RODS FINISHED KEYS

The CANADIAN DRAWN STEEL CO., Limited

HAMILTON, ONTARIO

EXPORTERS OF

Reed Organs, Piano Stools, Music Cabinets.

Catalogue B.

The Goderich Organ Co. Limited

GODERICH, CANADA

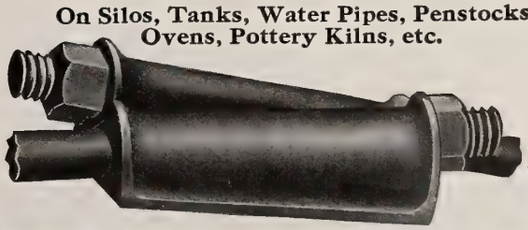
Closet Seats, Flush Tanks, Medicine Cabinets,

Everything for the Bathroom.

Write for Catalogue C and Price List.

LUGS FOR BANDS

On Silos, Tanks, Water Pipes, Penstocks Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods $\frac{5}{8}$ to $1\frac{1}{2}$ inch Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

OTTERVILLE MFG. CO., LIMITED

OTTERVILLE, ONT.

NEPONSET

Paroid ROOFING

ORDER PAROID AND SEE THAT YOU GET THIS ROLL



For Long Service
Freedom from Repairs
Moderate Cost
Fire Resistance

These are the main things to look for when you are deciding how you will roof your factories. Of course, any roof may be weather-tight at first. Paroid Roofs have given to date over 18 years' service.

Paroid, made from genuine asphalt, will not dry out, rust, rot, split or run in the hottest sun.

Paroid is very moderate in cost and high in fire-resistance. It now roofs such factories as:

Coniagas Reduction Co., Thorold, Ont.
Steel Co. of Canada, Hamilton, Ont.
Hamilton Bridge Co., Hamilton, Ont.
Canadian Crocker Wheeler Co. St. Catharines
All Railways in Canada

GREY RED GREEN

You have your choice of 3 colors—the Red and the Green being obtained by a permanent coating of crushed slate.

For prices, etc., write to

BIRD & SON
Dept. I
HAMILTON - ONT.

The Largest Manufacturers of Roofing, Wall Board and Roofing Felts in Canada



Warehouses: Winnipeg, Calgary
Vancouver, Montreal, St. John

St. John.

The St. John Shipbuilding Company will start work at once on their plant. The company contemplates wooden shipbuilding, and also plans steel shipbuilding at a later date.

The keel of the first wooden steamer for the Imperial Munitions Board was laid in the shipyards at Grant & Horne's works, Courtenay Bay, on August 13th.

ONTARIO.

Amherstburg.

Mat Lefler, Seymore Street, contemplates the erection of a $5,000 factory.

Aylmer.

Plans are being prepared for two-storey reinforced concrete storage building, costing $20,000, for the Carnation Milk Company, Limited.

Belleville.

The Fruit Machinery Company, Hamilton Street, Ingersoll, contemplate alterations and addition to building for a foundry.

Brantford.

Tenders will be called about September 1st for the erection of a $30,000 two-storey brick factory for the Kitchen Overall and Shirt Company.

The Massey-Harris Company have decided to extend their factory here and are asking for prices on the steel work, etc.

Cardinal.

Contract has been awarded on $30,000 factory addition for the Canadian Starch Company, 164 St. James St., Montreal.

Dundas.

The John Bertram & Sons Co., Limited, will erect a $93,000 office building.

Work has been started on a $200,000 office building for Pratt & Whitney.

Durham.

The Rob Roy Cereal Mills are being enlarged.

The National Portland Cement Company's plant, which has been closed for the past year, will commence operations again. The plant has been repaired and new machinery installed.

Frederickhouse River.

The Beaver Abitibi Timber Company, Limited, Beaver Road, Buffalo, N.Y., have purchased from the Frederickhouse and Abitibi Timber Company the limit secured from the Ontario Government, and work will be started at once on construction of camp and rossing plant. New station will also be built at the junction of the Frederickhouse River and National Transcontinental Railway, where sawmill, etc., will be built.

Goderich.

The plant of the Goderich Manufacturing Company, valued at $100,000, was destroyed by fire.

Gravenhurst.

The National Potash Co., Limited, 257 Confederation Life Building, Toronto, will spend about $15,000 on buildings, chiefly frame construction, and about $150,000 on machinery.

The World's Highest Standard

BUTTERFIELD TAPS



You can lose a lot of money and waste a lot of expensive time by getting poor taps on good machines.

On the other hand, every Butterfield Tap you buy will return you full value for the money invested —value in fast work, in accuracy and in long service.

Considering this, it's really no wonder so many shell-making plants prefer the Butterfield, for, in exacting work, their superiority is proved beyond all question.

Butterfield & Co., Inc.
Rock Island, Que.

SAWS FOR SHELLS

We have experimented on the

SPECIAL SHELL STEEL

and have produced a HACK SAW BLADE that will give unequalled service on this material in HIGH-SPEED MACHINES

Possibly we could help you.

"Victor Blade— Canadian-Made"

VICTOR SAW WORKS, LTD.
HAMILTON, ONT.

VICTOR HACK SAWS Get a Box and Try 'em

COTTON & WOOL WASTE

PACKED AT OUR

DOMINION WASTE FACTORY
TORONTO

THE GUARANTEE WITH OUR

Washed Cotton Wipers

All wipers have been hand selected, hard and starchy parts and buttons, etc., removed, sleeves and other closed parts opened and subjected to a thorough washing, rendering absolutely sanitary.

Write us for prices on our brands

SELECT WHITE MIXED COLORED DARK COLORED

SCYTHES & COMPANY, LIMITED
Manufacturers and Jobbers, Toronto, Montreal

WASHED COTTON WIPERS



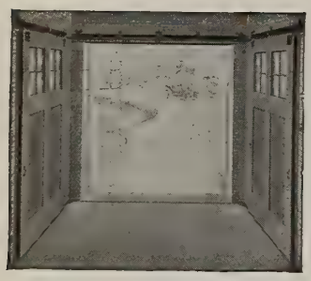
OUR XXX GENUINE ARCTIC METAL

cannot be surpassed for Extra Heavy Work.
It is a Tin Base Metal guaranteed to contain **no lead.**
We recommend it for its

QUALITY

It will reduce your babbitt expense. Try it.

Tallman Brass & Metal Co.
HAMILTON, ONT.



Garage Door Hardware of all kinds for any purpose



Fire Door Hardware—All Styles with Underwriters' Label



CARRIER SYSTEMS
I-Beam or Trolley

Save Money on Your Factory Transportation



BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

Richards-Wilcox
CANADIAN COMPANY, LTD
LONDON, ONTARIO.



"R-W" Trolleys are best for all sliding doors

Guelph.

The Guelph Carpet Mills will erect a $3,000 frame and iron storage shed on Neeve St.

Hamilton.

The Globe Engineering Co., Limited, has been incorporated with a capital of $100,000, and will take over the assets and liabilities of the Globe Electric Machine Co., Limited. The head office of the company is at Hamilton.

F. W. Fearman & Company will erect a $15,000 two-storey brick cold storage plant.

The Canadian Cotton Company will build an addition to their factory costing $60,000.

The Acme Stamping and Tool Company will erect a $10,000 addition to their factory.

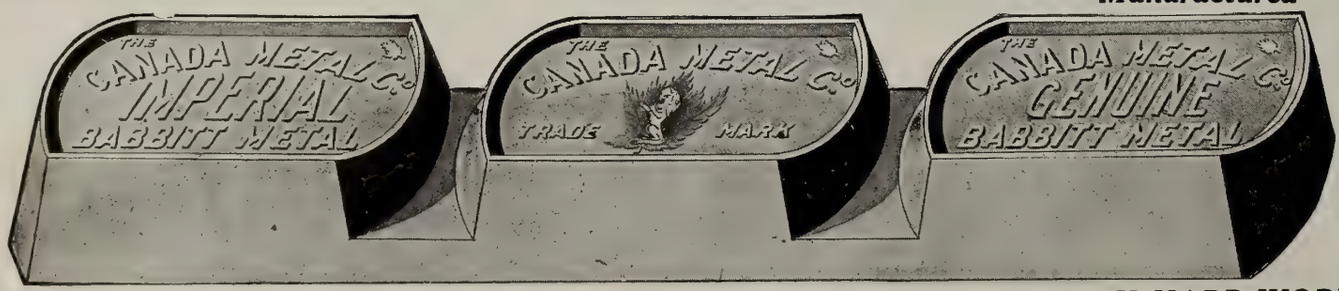
D. A. Brebner, Limited, Burlington Street, will erect a $10,000 one-storey frame factory addition.

Tenders are being received by the manager, K. Bethune, for the erection of a $125,000 addition to the factory of the American Can Company.

Contracts have been let in connection with the $60,000 five-storey brick factory addition for the Canadian Cotton Company, James St. North.

Alex. M. Snyder, a former well-known Hamilton man, has returned from Detroit to organize a $5,000,000 corporation, to be known as the Canadian Hession Tiller and Tractors, Limited. The head office of the concern will be located in Toronto, temporarily, with Mr. Snyder as general manager. Hamilton is being considered as a location for the factory.

IMPERIAL GENUINE BABBITT METAL *The Highest Grade Manufactured*



Made specially for all HIGH SPEED, HEAVY ENGINES and EXTRAORDINARY HARD WORK

Manufactured and guaranteed to give excellent service by
THE CANADA METAL COMPANY, Limited, FRASER AVENUE TORONTO, Hamilton, Montreal Winnipeg, Vancouver



$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

J. R. BAXTER & CO., LTD. Montreal
H. W. PETRIE LTD. Toronto
McDOUGALS LTD. Ottawa
COWAN HARDWARE CO. London
WALKERVILLE HDW. CO. Walkerville
NORTHERN CAN. SUP. CO. Cobalt

Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO, ONT. CANADA

THE NICHOLS CHEMICAL COMPANY, LIMITED

MANUFACTURING CHEMISTS

HEAD OFFICE: 222 ST. JAMES STREET, MONTREAL

Branch Office—120 Mill Street, Toronto

WORKS: Capelton, Que., Sulphide, Ont., Barnet, B.C. WAREHOUSES: Montreal, Toronto

Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
Muriatic Acid	Sulphide Soda	Blue Vitriol	Tri-Sodium Phosphate
Nitric Acid	Hypo-Sulphite Soda	Sulphate Alumina	Ammonia
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Mixed Acid	Phosphate Soda	Caustic Soda	Tin Crystals

Agents for Baker & Adamson's Chemically Pure Acids and Chemicals

AGENTS FOR CANADIAN SALT CO.—"WINDSOR" BRAND CAUSTIC SODA & BLEACHING POWDER

DELANY & PETTIT, LIMITED

Joint and Veneer Glue

Always uniform.

OFFICE:

133 Jefferson Avenue,
TORONTO, ONT.

D AND P QUALITY

Special Woodworking

Garnet Paper and Cloth

WORKS·

105-131 Jefferson Avenue
106-118 Atlantic Avenue



Why Pay Freight on Wooden Boxes?

MARTIN

Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

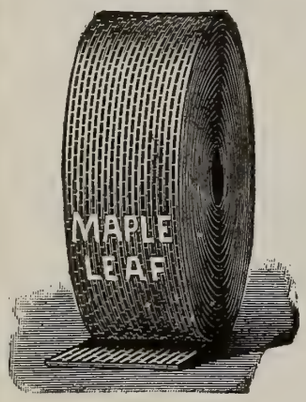
Write for catalogue and sample. Give inside dimensions and weight of contents.

Martin Corrugated Paper & Box Co., Ltd.

Office and Factory - - 353 Pape Avenue, Toronto

Study Economy with Profit

We are the sole manufacturers of the celebrated



"Maple Leaf" Brand Stitched Cotton Duck Belting

The best on the market for **Transmission of Power, Conveying, etc.** Also **"Maple Leaf" Belt Dressing,** which is unexcelled, and equally good for using on all kinds of belting.

WRITE US FOR PRICES

DOMINION BELTING CO., Limited
HAMILTON, CANADA

Quebec Branch, 51 Duluth Building, Montreal

London.

Work will commence at once on a $60,000 addition to the plant of the Battle Creek Toasted Corn Flakes Company in East London. The building will be four storeys in height and of reinforced concrete.

R. J. Haley, St. Louis, Mo., may establish a rubber industrial plant here.

Electrical contract has been awarded in connection with the $20,000 factory addition for the Gorman Eckert Company.

Markham.

Canada Cereal Company will call tenders about March 15, 1918, for proposed flour mill.

Midland.

Contracts for the buildings in connection with the McDougall-Smith Shipbuilding Company's plant, in which Capt. Alex. McDougall is interested, will be let shortly.

New Toronto.

Work on the erection of the new plant of the Goodyear Tire and Rubber Company has been completed and operations started. The plant cost $1,000,000 to erect, covers two acres, and took a little over one year to complete. The factory has its own power plant, capable of producing 25,000 horse-power, and as the plant will consume over 1,000,000 gallons of water per day, it was necessary to build a special waterworks system, including a 90,000-gallon tank to supply the sprinkler system.

633-661 EASTERN AVENUE



ESTABLISHED 1852

The Largest Patent Leather Manufacturers in the British Empire

A. R. CLARKE & CO., LIMITED

MONTREAL TORONTO QUEBEC



Cut of 60-inch "Extra" Double Belt
Made by The J. C. McLaren Belting Co., Limited.

WE ARE HEADQUARTERS FOR ALL KINDS OF

BELTING
LACE LEATHER
CARD CLOTHING
REEDS AND
GENERAL
MILL SUPPLIES

ABSOLUTE SATISFACTION GUARANTEED

The J. C. McLaren Belting Co., Limited

ESTABLISHED 1856
Head Office and Factory
MONTREAL, Que.

Branches:
50 COLBORNE ST., TORONTO
80 LOMBARD ST., WINNIPEG

Made in Canada



From British Stock

"GENUINE OAK"
LEATHER BELTING
"D.K."
BALATA BELTING
Guaranteed to Give Satisfaction

D. K. McLAREN LIMITED
TORONTO MONTREAL ST. JOHN, N.B.
847 Beatty Street, VANCOUVER
Engineer's Supply Co., 123 Bannatyne Ave. E., WINNIPEG

LEATHER BELTING
Made in Canada

J. L. Goodhue & Co., Limited
DANVILLE, QUEBEC

Manufacturers of
SUPERIOR QUALITY LEATHER BELTING AND LACE LEATHER

QUALITY
Not Price Our Aim

Canadian Manufacturers SHOULD USE Canadian Belting

Winnipeg Agents:
BISSETT & WEBB, Limited
151 Notre Dame Ave. East
Winnipeg, Man.

Vancouver Agents:
FLECK BROS., Limited
1141 Homer St.
Vancouver, B.C.

Ojibway.

Plans have been filed with the Canadian Government by a Windsor law firm, acting for the Canadian Steel Corporation, for docks to be constructed here at a cost of $250,000. Plans include a marine slip, harbor, docks and wharves. A canal running through the corporation's property for 2,500 feet, which will be 200 feet wide and 25 feet deep, will be dredged to accommodate boats. It is proposed to build docks on the bank of the canal, while another dock, a thousand feet long, is planned for the river front. The corporation expects to start work next month.

Orangeville.

The Alton knitting mills were destroyed by fire, entailing a loss of about $11,000.

The Upper Woolen Mill, owned by John Dodds, was destroyed by fire.

Ottawa.

J. R. Booth, Bridge and Booth Sts., will erect a $15,000 concrete acid plant.

St. Catharines.

The Normandy Tire and Rubber Co., Limited, 413 C.P.R. Building, Toronto, contemplate the erection of factory buildings.

St. Thomas.

According to reports, representatives of the Ford Motor Company, of Canada, have been in this city to secure a site for the erection of a tractor plant.

PAPER SITUATION

Let us give you ten reasons why prices will advance.

No doubt your stock of everything in Paper and Stationery is at a minimum, for there has been a general feeling that prices would drop. However, we have studied the situation very carefully and arrived at the conclusion that with all raw materials advancing right along—Wood costing nearly $20.00 per cord against $4.00 as in pre-war days and wages advanced 50%—there are certain to be further large advances. Be wise and take advantage of our large stocks or favor us with your enquiries. We are agents for American Mills making all Papers such as, Genuine Parchment, Glassine, Filter and Insulating Papers, formerly made in Germany, also we are Pioneers of Canadian-made Kraft Wrappings, the most economical wrapper. Get particulars of Waterproof Papers and our Tufenuf Twine Reinforced Waterproof Paper, which replaces Burlap for all purposes to advantage; Barrel Heads, Heavy Bags, Brattice Cloth for mines, etc.

Mill Supply Dept.: Boiler Preservatives, Linings, Vul. Fibre.

BEVERIDGE PAPER CO., Limited ***Pulp and Paper Mill Agents*** **Montreal**

H. & D. Corrugated and Solid Fibre Board



CONTAINERS will save on your transportation charges, save your floor space, cut down packing expenses, and give you positive protection against loss from damage and pilfering. Write for prices and samples.

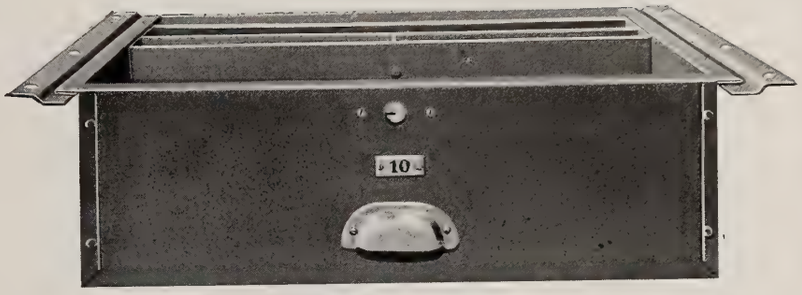
The Hinde & Dauch Paper Co. of Canada, Limited, Toronto, Canada

FACTORY EQUIPMENT



STEEL STOOLS

Our stools have wood seats firmly riveted to the steel frame. 20, 22, 24, 26 inches high, may be fitted with backs if so desired.



TOOL DRAWERS

These drawers do not warp and bind like those made of wood. Each one is provided with a high-class lock and the locks are masterkeyed. Your mechanics' tools will be safe in "MEADOWS" Tool Drawers.

The Geo. B. Meadows, Toronto Wire, Iron & Brass Works Co., Ltd.
479 WEST WELLINGTON ST. - TORONTO, CANADA

L. W. MANCHEE,
President.

W. P. BENNETT,
Vice-President.

OUR trained Corps of Paper Box Experts might be able to make a valuable suggestion regarding YOUR packages.

WRITE OR CALL UPON

RUDD PAPER BOX CO., LIMITED

372-376 Richmond Street West
TORONTO - - - - - CANADA

Sarnia.

A new concern to manufacture automobile parts will start building operations shortly. The main promoter of the plant is Senator Lyman A. Holmes, President, Romeo Founders Company, Port Huron. Estimated cost of plant, $200,000.

Sault Ste. Marie.

International Paper Company has purchased a site from the Lake Superior Corporation on which the company proposes to erect a paper pulp plant.

Sudbury.

A smelter and nickel refinery is to be erected here by the British America Nickel Corporation, Limited, Royal Bank Building, Toronto. Estimated cost is $6,000,000.

Tillsonburg.

Contract has been awarded for a $50,000 factory for the Maple Leaf Harvest Tool Company.

Tilbury.

By-law has been carried granting concessions to Hesscot Electric Mfg. Co., 210 Adelaide St. West, Toronto, who are to erect factory costing $100,000 in Tilbury.

Toronto.

Ten thousand dollars' damage was done to machine shop owned by the Polson Iron Works, Esplanade East, when crane fell through roof.

The Willys-Overland Company will build a new machine shop at their factory on Weston Road.

The Dominion Wheel and Foundries, 131 Eastern Ave., have had plans drawn for a $5,000 machine shop. They will buy materials and supervise all trades.

The Imperial Extract Company will erect a $15,000 brick factory.

The Imperial Oil Company have applied for a permit to erect a 1,470,000-gallon tank on their property at the foot of Cherry Street, for the storage of gasoline. Neither the city architect nor the fire chief were willing, however, to assume the responsibility of authorizing the storage of so large an amount of inflammable material above the ground. They have received permission from the Board of Control to visit a number of places where tanks of a similar nature to that proposed are installed and in operation, and will inspect them before granting the permit.

The Canadian Hanson Van Winkle Company, 15 Morrow Ave., are erecting a $6,500 one-storey brick addition.

The Thor Iron Works have been notified by the Toronto Harbor Commission that they will be required to vacate their property within the next few months, so that the dredging can be completed in connection with the construction of a dock. The company will build a new plant in the Ashbridge's Bay industrial district.

Permit has been issued to the Swift Canadian Company to erect a reinforced concrete brick cooling building at the corner of St. Clair Ave. and Keele Street, at a cost of $120,000.

Work has been commenced on a $70,000 reinforced concrete and steel forge and machine shop for the British Forgings, Limited, Royal Bank Building.

CHEMICALS

ACIDS
All Strengths
Sulphuric (Commercial and Chemically Pure)
Muriatic (Commercial and Chemically Pure)
Nitric (Commercial and Chemically Pure)
Mixed
Acetic

Glauber Salt
Aqua Ammonia Commercial or C.P.
Anhydrous Ammonia
Salt Cake
Soldering Flux
Tinning Flux
Zinc Chloride
Ammonia Chloride (Sal Ammoniac)
Silicate of Soda

Bicarbonate of Soda
Caustic Soda
Hypo Sulphite of Soda
Sulphide of Soda (all forms)
Bi-Sulphite of Soda
Soda Ash
Chloride of Lime
Calcium Chloride
Epsom Salt

Bi-Sulphate of Soda (Nitre Cake)
Magnesium Chloride
Phosphate of Soda
Copperas (Crystal and Sugar)
Bi-Chromate of Soda
Sulphate of Alumina
Tri-Sodium Phosphate
Titanium Oxalate

Acetate of Lead (all forms)
Lithopone
Logwood
Logwood 51' for cotton
Hematine Crystals
Fustic (all forms)
Sulphur Black Powder
Sal Soda
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Grasselli Lime Sulphur Solution and Lead Arsenate
For Tree Spraying

The Grasselli Chemical Co. Limited

HEAD SALES OFFICE: TORONTO, ONTARIO

Branch Sales Office, Montreal, Que. Works: Hamilton. Ont.

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We want to equip your plant with

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and show you how to reduce insurance costs 50% to 80%.

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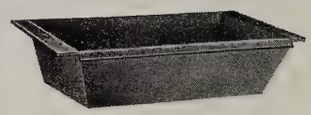
The Canadian Hanson Van Winkle Company have been granted a permit to erect an office building and garage at 12 Morrow Ave., to cost $8,000.

Contracts have been awarded in connection with the $80,000 mill and brick warehouse for Davis and Mehr, Union Bank Building.

The Imperial Munitions Board are constructing another building on Wallace Ave., for the construction of aeroplanes. It will be of the usual type with galvanized iron sides, and will house 250 workmen.

The Synthetic Drug Company, which has been carrying on business as a partnership, is now incorporated as Synthetic Drug Co., Limited. The new business will be run by the same principals as before.

STEEL FACTORY EQUIPMENT



Steel Shop Boxes, Foundry Boxes, Shelf Boxes, Shop Barrels, Stools, Oily Waste Cans, Garbage Cans.

Gasoline Tanks and Pumps, Pressure Tanks, Storage Tanks, Smoke Stacks.

Anything in Black or Galvanized Sheet Metal up to ⅛ thickness. Send blue print or rough drawing and get our prices.

Sheet Steel Sundries for manufacturers is one of our specialties.

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The Steel Trough and Machine Co. Limited

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PURDY, MANSELL LIMITED

TORONTO

Cut your insurance in half by having us instal an

Automatic Fire Sprinkler System



throughout your Factory, Store or Warehouse.

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SHEET METAL STAMPINGS

DIES AND TOOLS

W. H. BANFIELD & SONS

LIMITED

370-386 PAPE AVE. TORONTO

ANNOUNCEMENT

The Business of

The General Fire Equipment Co., Limited,

was taken over on June 15th by

The Bennett & Wright Co.,
Limited

72 Queen St. East - Toronto

and will hereafter be known as their

FIRE PROTECTION DEPARTMENT

THE BENNETT & WRIGHT CO., Limited, will continue to use, in their installations, the

Manufacturers' Automatic Sprinklers

"The Head that Stood the Test"

The business of The General Fire Equipment Co., Limited, was conducted largely under the same management as THE BENNETT & WRIGHT CO., Limited, and we wish to assure our customers that their requirements will continue to receive prompt and careful attention.

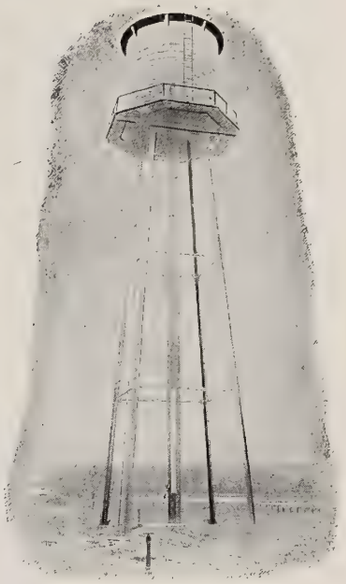
The General Fire Equipment Co., Limited.

Wood Tanks and Vats

All sizes and styles.

Made from selected Tank Stock.

Towers and Tanks for sprinkler and water supply, etc.



Goold, Shapley & Muir Co., Ltd.

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SPRINKLER TANKS and TOWERS

also wood and steel tanks for Municipal, Railway and Suburban water supply.

All our tanks and towers are built to pass inspection of any Board of Fire Underwriters.

Send for special tank and tower catalogue.

GALVANIZING HOT AND ELECTRIC

We do all kinds of hot and electro galvanizing for the trade. Our plant is one of the largest in Canada and our charges reasonable.

Write us for quotations on your galvanizing work.

Ontario Wind Engine & Pump Co., Limited

TORONTO MONTREAL WINNIPEG CALGARY



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CHICAGO BRIDGE & IRON COMPANY
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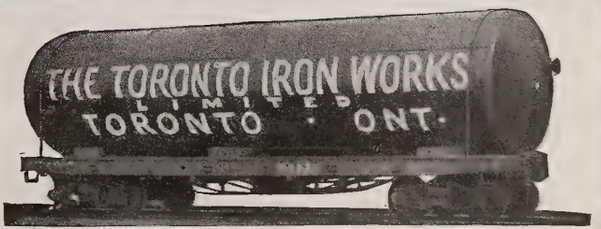
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BOILER BREECHING - RIVETED STEEL PIPE - BINS & HOPPERS

Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Trenton.

The Gaylord Engineering and Construction Co., Inc., have entered action at Osgoode Hall, Toronto, against the Imperial Munitions Board and the Davis Durkin Corporation of New York to recover payment for work done here in connection with the erection of a guncotton plant. An account is asked as to material and machinery purchased and ten per cent. of the amount is claimed, less $10,000 already paid. The sum of $20,000 is asked for extra work alleged to have been done and $150,000 damages for alleged breach of contract. The head offices of the Gaylord Company were originally in Binghampton, N.Y.

Walkerville.

Fred F. Ferguson, care of Canada Iron Foundry, St. Thomas, has secured premises here and will equip same for manufacturing castings, etc.

West Lorne.

The plant of the West Lorne Motors, Limited, is being enlarged.

Windsor.

The Moloney Electric Company will erect a $12,000 addition to their factory.

Woodstock.

The Woodstock Cotton & Spinning Company have let the general contract for a $40,000 factory.

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Auckland, Wellington, Lyttelton and Dunedin (New Zealand) and Melbourne and Sydney (Australia). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

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Ask our rates.
A trial shipment will demonstrate the facilities we possess for giving COMPLETE SATISFACTION.

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THE FINEST HUNTING GROUNDS IN AMERICA

ARE CONVENIENTLY REACHED

Via

Canadian Pacific Railway

MOOSE--BEAR--CARIBOU

RED DEER AND SMALL GAME

ARE QUITE PLENTIFUL

PARTICULARS FROM CANADIAN PACIFIC TICKET AGENTS OR W. B. HOWARD, DISTRICT PASSENGER AGENT, TORONTO

THE
MONTREAL COTTONS
LIMITED

MANUFACTURERS OF

WHITE VICTORIA LAWNS

WHITE NAINSOOKS

and

DYED COTTONS

OF EVERY DESCRIPTION

QUEBEC.

Cape de la Magdeleine.

The Belgo-Canadian Pulp and Paper Company, River Side, Shawinigan Falls, contemplate erection of a mill.

Chambly Canton.

Contract has been let for a new plant for the Canadian Leatherboard Company. The cost is estimated at about $225,000.

Chicoutimi.

La Cie de Pulpede de Chicoutimi will erect a $100,000 one-storey rubble stone and plastic brick construction machine shop; also a $5,200 one-storey rubble stone grinder room.

Dragon.

The plant of Curtis and Harvey, recently destroyed by fire, will be rebuilt.

Maisonneuve.

Plans have been prepared for shoe factory for Lida Shoe Company, 899A La Salle Ave.

Montreal.

The Atlas Construction Company are behind a scheme for the construction of reinforced concrete vessels in Montreal. The first is to be constructed in the Mill Street dry-dock, and will be 125 feet long. It is understood that the cost will be within $100,000, and the vessels are expected to be launched by October. Prominent Montreal business men will provide the capital.

Penmans

Underwear, Hosiery and Sweaters
Laundry, Pulp and Papermakers' Felts, Blankets
Lumbermen's Socks, etc.

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PARIS, THOROLD, PORT DOVER, ALMONTE AND BRANTFORD, ONTARIO
ST. HYACINTHE AND COATICOOK, QUEBEC

Penmans LIMITED

PARIS : : : CANADA

Ship it Canadian Northern all the way

PROSPECTS 1917!

Latest advices from its agents in Western Canada to the Canadian Northern Railway, indicate a crop prospect equal to that of last year.

A survey of labour conditions foreshadows the need of 25,000 men to help the farmers along Canadian Northern lines garner the grain this season.

The manufacturers in Eastern Canada therefore have in prospect a greatly-increased demand in all the goods Eastern Canadians produce for Western Canadians.

The transcontinental system of the Canadian Northern Railway connects the chief eastern centres with the most productive areas of Canada West.

TEST CANADIAN NORTHERN RAILWAY SERVICE

Principal Agencies: Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



Twenty thousand dollars damage was done by fire to the plant of Holmes, Hogue and Company, 235 Chatham Street.

Contract has been awarded for a $48,000 factory for Canadian Vickers, 3072 Notre Dame St. E.

The Simonds Canada Saw Company will make alterations to their factory costing $4,500.

The Consumers Cordage Company are erecting a $40,000 brick storage warehouse.

Damage to the extent of about $50,000 was done by fire in the establishment of Gray & Co., 25 Common Street.

Rigaud.

The loss caused by explosions at the powder plant of Curtis & Harvey is estimated at $2,000,000.

St. Jerome.

The Dominion Rubber Company have let contract for a $45,000 addition to their factory.

St. Lambert.

The by-law covering the agreement between this town and the Dominion Textile Company, providing for the establishment of a large manufacturing plant, has become operative without the necessity of a poll of the ratepayers.

Three Rivers.

L. H. Bacque, care Hotel Dufresne, Three Rivers, will build a pressed lime cement brick plant here at a cost of $100,000. The name of the company will be the Three Rivers Sand-Lime Brick Company.

JULIUS COHEN & JOSEPHY

Foreign Domestic WOOL *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO
Manufacturers of Pulled Shoddies

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HOTEL AND INSTITUTION KITCHEN APPLIANCES

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FURNACES

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STEEL AND CAST RANGES

Coal, Gas, Wood and Oil
HEATERS

ENAMELWARE, TINWARE AND OTHER KITCHEN WARE

LONDON TORONTO MONTREAL WINNIPEG VANCOUVER
McClary's
ST. JOHN, N.B. HAMILTON CALGARY SASKATOON EDMONTON

BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

AIR DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOGRAPHIC REGISTERS
*Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS
Business Systems, Ltd., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited. Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited. Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited. Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited. Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

*For Display Advertisement see Index, Page 661



By Royal Warrant

"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

Distilled and Bottled by

HIRAM WALKER & SONS
LIMITED

Walkerville, Canada

LONDON CHICAGO NEW YORK
MEXICO CITY VICTORIA, B.C. WINNIPEG

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS GOODS
*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*McGregor & McIntyre, Ltd., Toronto.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.
Toronto.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

CATALOGUE MAKERS
Grip, Ltd., Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COAL CUTTERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.
Rolph & Clark, Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

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COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAM SEPARATORS
The Renfrew Machinery Co., Ltd., Renfrew, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRIFT BOLT DRIVERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILL SHARPENERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRILLS, core
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal. Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton. Ont.
Rolph & Clark, Limited, Toronto

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.

FANS
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited. Montreal.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FILING CABINETS
*Office Specialty Co., Newmarket, Ont.

FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE APPARATUS
*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.

FIRE BRICK, JOINTLESS
*Beveridge Paper Co., Ltd., Montreal.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

*For Display Advertisement see Index Page 661.

FIRE ENGINES
*R. S. Bickle Co., Woodstock, Ont.
Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.

FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GAUGES
*Brown Engineering Corporation, Toronto.

GEARS, cut
*Brown Engineering Corporation, Toronto.
*Hamilton Gear & Machine, Toronto.
*Winnipeg Gear & Engineering Co., Ltd., Winnipeg.

GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

GRINDERS, portable
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HACK SAW BLADES
*E. C. Atkins & Co., Inc., Hamilton, Ont.

HACK SAW FRAMES
*E. C. Atkins & Co., Inc., Hamilton, Ont.

HACK SAW MACHINES
*E. C. Atkins & Co., Inc., Hamilton, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEADING SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland. Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland. Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSERTED TOOTH SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.

INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

*For Display Advertisement see Index, Page 661

JAM, canned goods, etc.
E. D. Smith & Son, Limited.
JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.
JIGS AND TOOLS
*Brown Engineering Corporation, Toronto.
JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.
JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.
JEWELRY, gold-filled
Caron Bros., Montreal, Que.
JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.
KILNS
*Sheldons, Limited, Galt, Ont.
KINDLING
Standard Fuel Co., Toronto.
KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.
KNITTED GOODS
*Penman's, Limited, Paris, Ont.
KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.
KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.
KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.
LABELS
Lawson & Jones, Ltd., London, Ont.
LABELS, lithographed
Harris Lithographing Co., Toronto.
LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.
LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.
LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.
LAGER
E. L. Drewry, Winnipeg, Man.
LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.
LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.
LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.
LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.
LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.
LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.
LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.
LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.
LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.
LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.
LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.
LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.
LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.
LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.
LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.
LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.
LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.
LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.
LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.
LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.
LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.
LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.
LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.
LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.
LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Rolph & Clark, Limited, Toronto.
LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.
LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.
LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.
LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.
LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.
LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.
LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.
LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.
LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.
LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.
LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.
LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.
LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.
MACHINE KNIVES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.
MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.
MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, railroad and car shop
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.
MACHINERY, special
Bawden Machine Co., Limited, Toronto.
MACHINERY, tannery
W. P. Plant, Hastings, Ont.
MACHINERY, transmission
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.
MACHINES, painting
Spramotor Co., London, Ont.
MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.
MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.
MAPLE PRODUCTS
*Maples, Limited, Toronto.
MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.
MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
MATCHES
*The E. B. Eddy Co., Ltd., Hull.
MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.
MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.
METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.
METAL CEILING
*The Pedlar People Limited, Oshawa.
METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
METAL PACKING
*Garlock Packing Company, Hamilton, Ont.
METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
METAL SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
METAL SHINGLES
*The Pedlar People Limited, Oshawa.
MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.
MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.
MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.
MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.
MOTORS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
MOTOR TRUCKS
*Menard Motor Truck Co., Ltd., Windsor, Ont.
MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.
NAPHTHA
*The Imperial Oil Co., Limited, Toronto.
NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.
NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

*For Display Advertisement see Index, Page 661

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.
OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.
OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.
OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.
OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.
OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.
OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.
ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.
ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.
ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.
OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
OXYGEN
*L'Air Liquide Society, Montreal.
PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.
PACKING BOXES
Barchard & Co., Limited, Toronto.
PACKING, engine
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.
PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.
PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.
PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.
PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.
PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.
PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.
PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, wall
Stauntons, Ltd., Toronto.
PAPER, Waxed
Business Systems, Ltd., Toronto.
PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.
PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.
PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.
PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
PATENT LITIGATION
Ridout and Maybee, Toronto.
PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.
PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.
PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.
PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.
PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.
PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.
PIANO KEYS
The Otto Higel Co., Ltd., Toronto.
PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIANO, player actions
The Otto Higel Co., Ltd., Toronto.
PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.
PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.
PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.
PINS, society, emblems and badges
Caron Bros., Montreal, Que.
PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.
PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.
PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.
PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.
PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.
PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.
PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.
PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.
PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
PLANING MILLS
G. & J. Esplen, Montreal, Que.
PLASTERING TROWELS
E. C. Atkins & Co., Inc., Hamilton, Ont.
PLOWS
J. Fleury's Sons, Aurora, Ont.
PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.
PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.
PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.
PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.
POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.
POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.
POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.
PRESSES, baling and filter
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.
PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.
PRESSES, veneer
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRINTERS
Rous & Mann, Ltd., Toronto.
PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.
PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.
PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.
PULP
*Brown Corporation, La Tuque, Que.
PUMPS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

*For Display Advertisement see Index, Page 661

PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited. Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

ROLL PRINTING
*Autographic Register Co., Ltd., Montreal.
Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*The Pedlar People Limited, Oshawa.

SHEETS, galvanized
*Dominion Sheet Metal Co., Ltd., Hamilton.
*The Pedlar People Limited, Oshawa.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMELTER LINING
*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Ltd., Guelph, Ont.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards - Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

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SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPINGS, METAL
*Russell Motor Car Co., Ltd., Toronto.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*McGregor & McIntyre, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

STONE
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*McGregor & McIntyre, Ltd., Toronto.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.

SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls. Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd.. Brantford.

TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TIE TAMPERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

TILING, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, bicycle, auto, carriage, truck, motorcycle
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TOOLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.

TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.

TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.

TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.

TUBING, Fibre
*Beveridge Paper Co., Limited. Montreal.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

TUMBLERS, foundry
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURPENTINE
*Brown Corporation, La Tuque, Que.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte, Ont.

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.

VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VALVES, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal, Que.

VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.

WASHERS
*The Steel Company of Canada, Limited, Hamilton.

WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.

WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto.
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

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WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia. Ont.

WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
of Canada, Ltd., Hamilton, Ont.

WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont

WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES
Daly & Morin, Montreal, Que.

WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

WIRE CLOTH
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co.

WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE, weatherproof
*Northern Electric Co., Limited. Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE ROPE
*Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.

WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.

WOOD BORERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.

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*The Thompson & Norris Co., of Canada. Ltd., Niagara Falls, Ont.

WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.

WROUGHT IRON PIPE
*The Steel Compony of Canada, Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

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TORONTO
Canada

Vol. XVIII., No. 6 OCTOBER, 1917 $2.00 per Year

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This Campaign, in conjunction with editorial co-operation secured, was probably the most successful ever done in Canadian newspapers.

We are glad to make this acknowledgment of the opportunity that was given us to render service in this cause.

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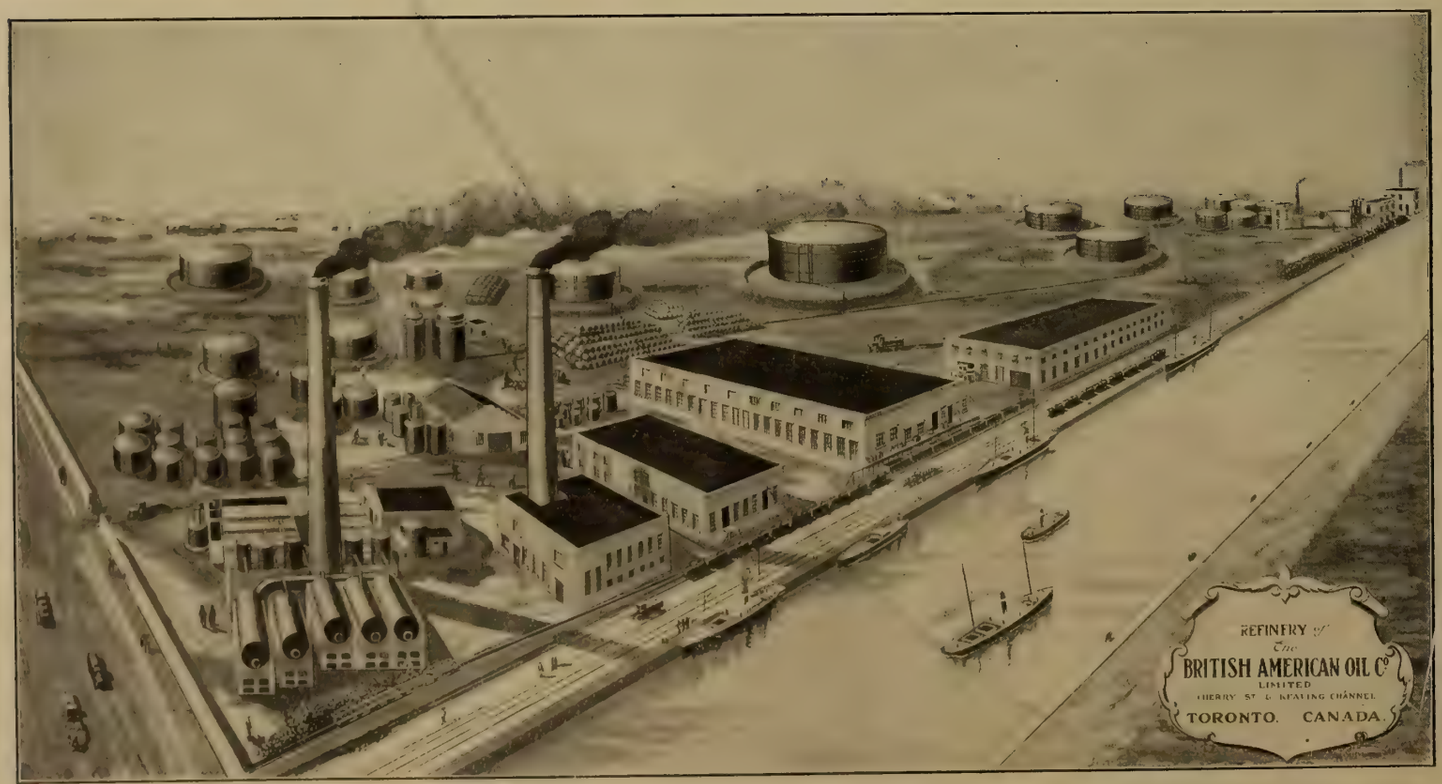
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Branches: Montreal, Ottawa, London, Windsor, Etc.

EVERY man who has ever used Dart Union Pipe Couplings, and watched results knows that they are a mighty good investment.

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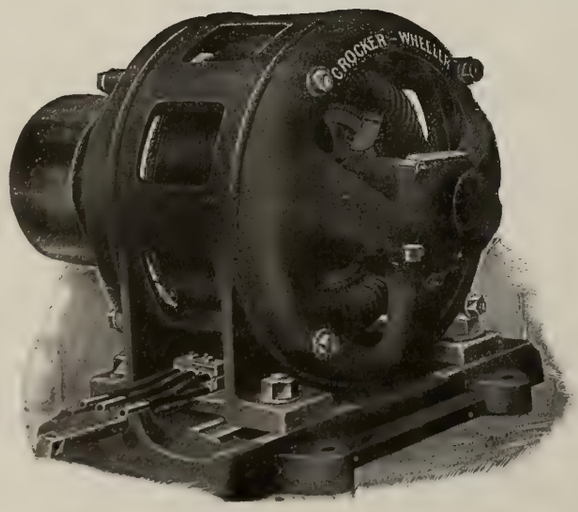
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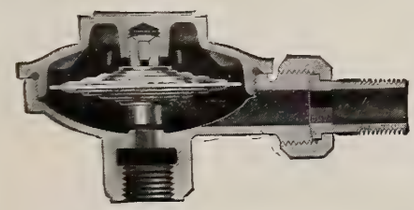
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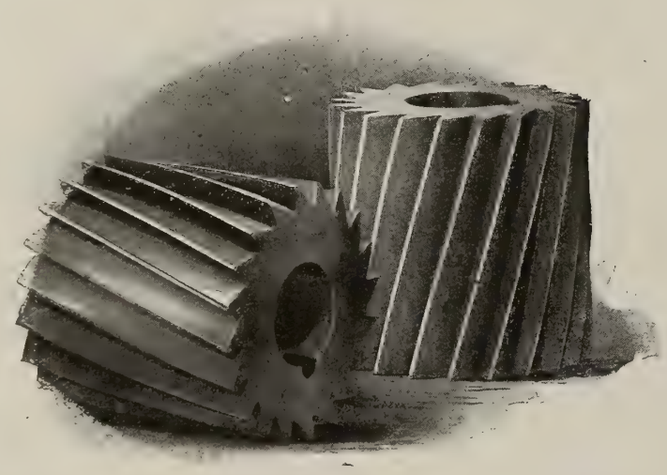
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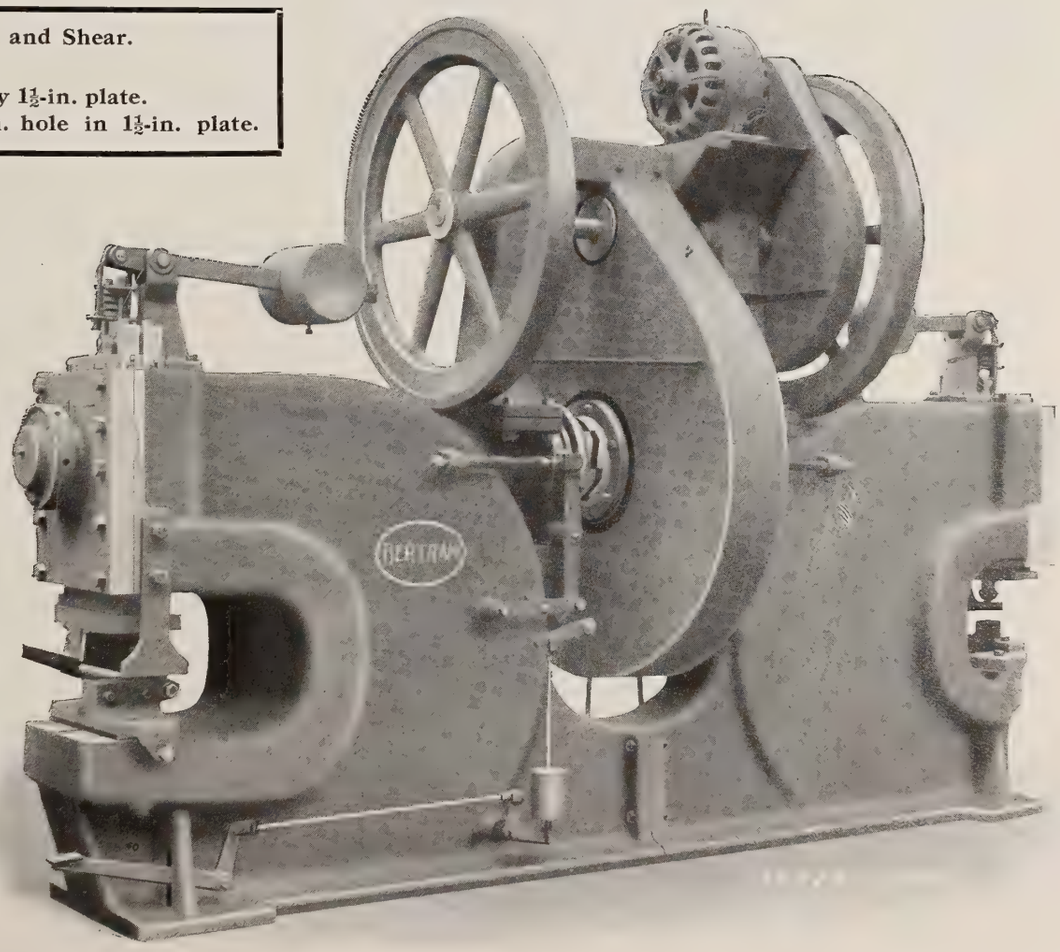
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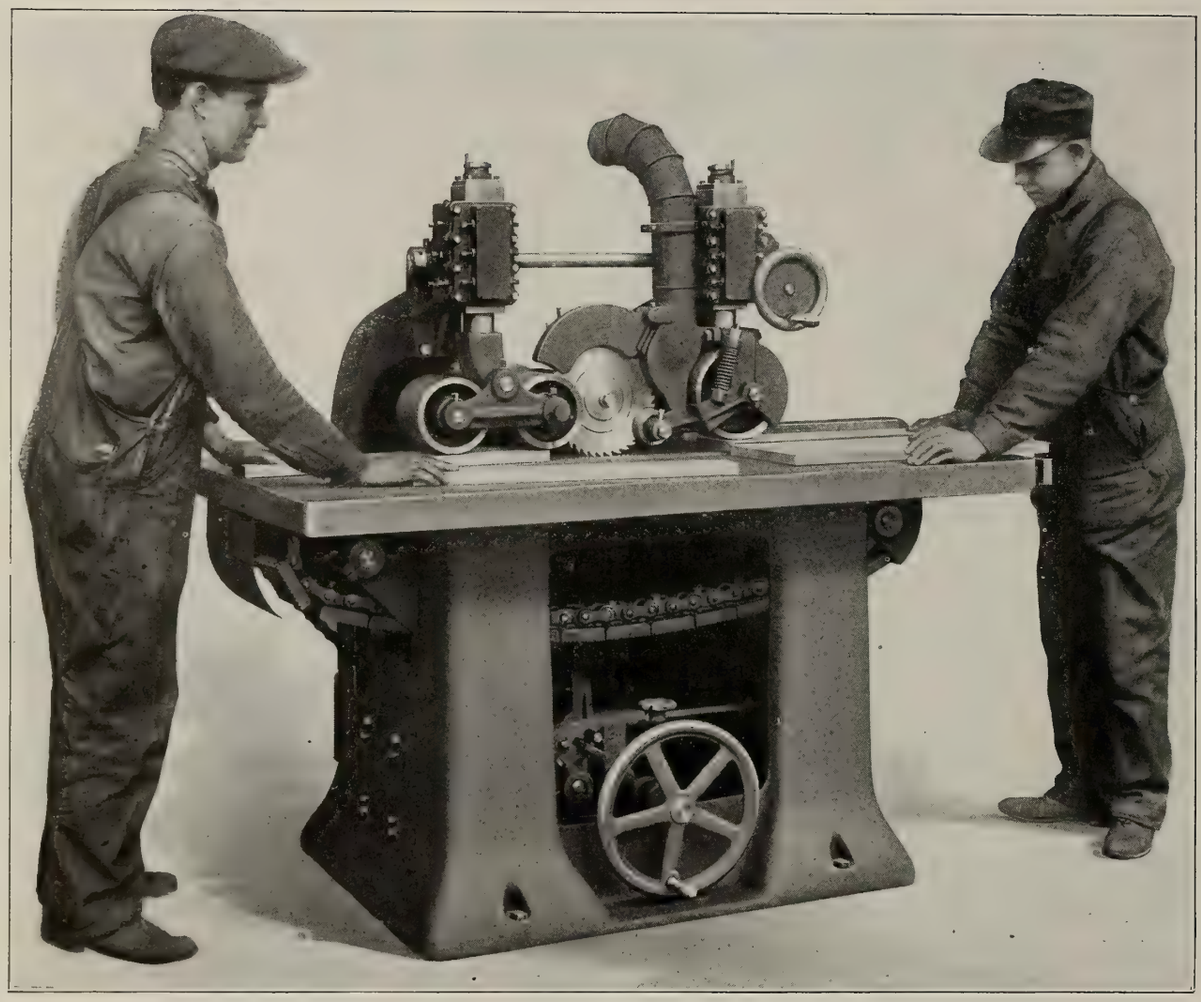
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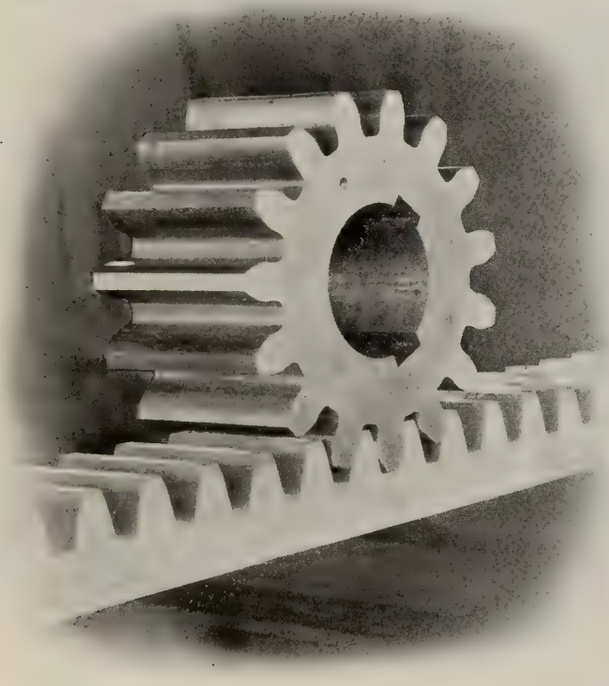
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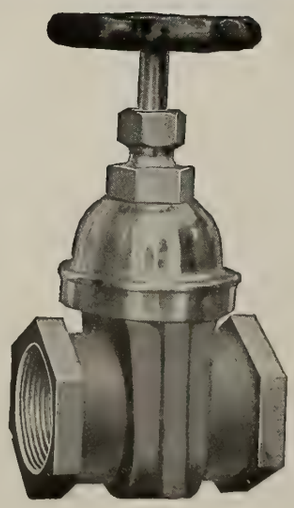
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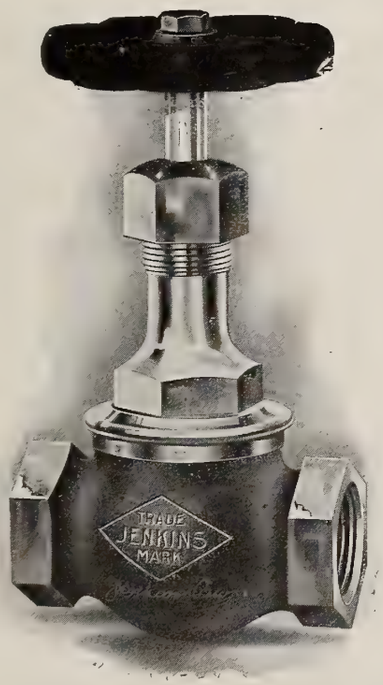
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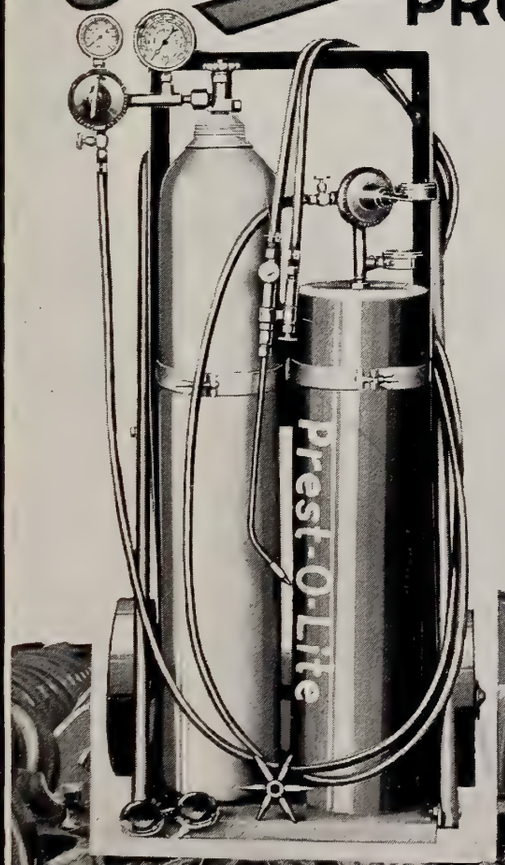
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Conserve Steel and Iron -Cut Out the Scrap Pile

Prest-O-Lite PROCESS



MILLIONS of dollars' worth of damaged or worn metal parts, castings and tools lie rusting in the scrap-piles of Canadian railroads, factories, mines, foundries, repair shops, etc.

By oxy-acetylene welding much of this enormous waste can be eliminated, and losses due to breakdowns —resulting in "tie-ups" of operating equipment—can be greatly reduced.

The Prest-O-Lite Process is ideal for all classes of metal repair work. It handles repairs quickly and efficiently—often right on-the-spot — makes the broken or worn part strong as new—saves time which would be wasted waiting for replacements—avoids the "scrapping" of valuable metal parts.

The welding outfit is portable—available at all times for outside work as well as for shop use.

In the manufacture of war munitions, ships, railway supplies, boilers, metal furniture, implements and tools this same process makes possible many striking economies—gives neater, stronger joints at *less* cost.

No matter what other welding method you now use, a Prest-O-Lite outfit put to work in your shops will speedily pay you profits. Write for special literature and data—now.

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Toronto, Ont. Montreal, Que.
Merritton, Ont. Winnipeg, Man.

Canadian Plants :

Toronto, Ont.; Merritton, Ont.; Winnipeg, Man.
Shawinigan Falls, Que.
(Under Construction)



QUITE REMARKABLE ECONOMIES HAVE BEEN EFFECTED in turning, planing and shaper work on all kinds of Steel, Cast Iron, Bronze and other materials

By the New

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WE ARE NOW ABLE TO RECOMMEND IT for Milling Cutters and Form Tools of various kinds.

Information and quotations supplied by our Service Department on application.

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Carbide of Calcium, made by the CANADA CARBIDE COMPANY, Limited, is packed in Green Drums.

We make a first grade only

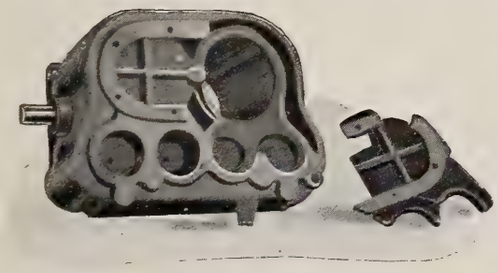
Where pure ACETYLENE is required you must have first grade CARBIDE.

The best costs you no more and gives you better results.

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Canada Carbide Company, Limited
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Oxy-Acetylene Welding, as an Economical Factor



BROKEN CYLINDERS BEFORE WELDING

in the conservation of valuable material, is universally recognized. Thousands of dollars are saved daily by reclaiming broken machinery parts, castings, etc., thereby reducing maintenance costs of Plants to a minimum. The incidental losses caused by having expensive machinery and labor standing idle and unproductive, are entirely eliminated.

Leading manufacturers in Canada, as in other parts of the world, are **Welding** Metals because it **Improves** the **Product, Simplifies** the **Process** and **Reduces** the **Cost.** After smoothing the weld it is impossible to detect the joint, and the result is a more finished product of increased marketable value, absolutely air-tight, leak-proof and of greater durability.

An "A.L.S." Oxy-Acetylene Welding Outfit Saves Its Cost Many Times Over

There is no limit to its uses, and being backed by "A.L.S." Service, there is no doubt as to the results to be obtained. Valuable material is continually being thrown on the scrap heap that **can be** and **should be** converted to use again. Why allow this waste to continue?



SAME CYLINDERS AFTER WELDING

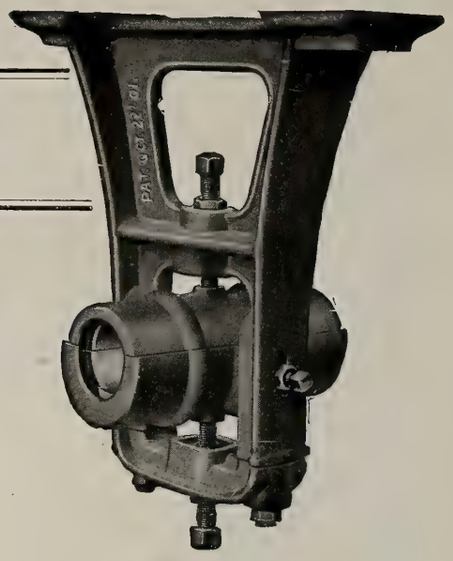
These are Facts That Will Pay You to Investigate

We shall be pleased to give you all particulars that will enable you to judge of the benefits the process has for you in your industry. Write to-day — no obligation.

L'AIR LIQUIDE SOCIETY

Canadian Factories:
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Factory under Construction

Bond Hangers



Economical—Dependable

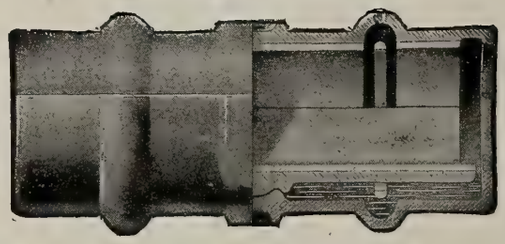
Oil economy with Bond Hangers is proverbial—for the efficient ring-oiling device supplies a constant flow of oil to the surface of the shaft with every revolution.

Oil cannot leak out the ends of the bearings because of the oil ducts that collect all superfluous oil and return it to the reservoir—preventing waste.

Bearings that are babbitted and then reamed, the ease with which misalignment can be corrected with the universal adjustment, and other Bond Features, assure long life and dependability.

The Bond Hanger Book fully describes the economical and dependable features.

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CANADIAN BOND HANGER AND COUPLING CO.
LIMITED
ALEXANDRIA ONTARIO

YOU CAN INCREASE YOUR POWER WITHOUT INCREASING THE SIZE OF YOUR POWER PLANT

Your present line shafting is consuming from 15% to 60% of your power.

The Chapman Double Ball Bearing will save this waste and turn it into productive energy.

They will also reduce your oiling and attention to a minimum.

They fit any adjustable hanger and the change can be made with but little delay to you.



In use in over 2,000 Canadian Factories

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OF CANADA LIMITED

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Wood Split Pulleys

reduce belt slippage to the minimum, thus preventing the waste of costly power.

IF your engines develop ten thousand horse power, and deliver that to a line shaft, doesn't it hurt you to feel that any waste occurs between shaft and machine?

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Canada's Greatest Pulley Makers

TORONTO

YOU know the trouble you have had with those concrete floors that keep continually softening up and dusting; what a loss this means in deterioration of stock and injury to machinery—in time lost moving merchandise over those uneven, crumbling floors—in repair and replacement costs. You know how often you have wished for something that would harden those floors and stop those losses. Well, here it is :

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chemically transforms a soft, dusting floor to a hard, dense, inpenetrable surface without changing its color or appearance. Actually enters into chemical reaction with the constituents of the cement and forms entirely new compounds, hard, enduring and resistive to wear. Affords three indispensable factory requirements—dustproof, wear-proof and sanitary floors.

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THERE'S ONE SURE WAY TO INSURE YOUR RECORDS

AND THAT'S BY AN

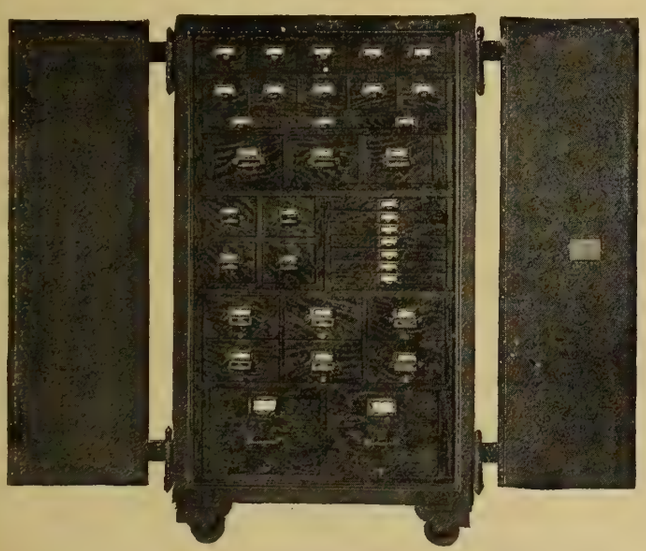
OFFICE SPECIALTY

RECORD SAFE

IF Your Factory burned down to-morrow—if your office suffered the ravages of fire—you would probably get your money for the damage sustained within a few days after the Insurance Company's inspection.

BUT, if your records go—if the important documents, the vital data upon which your business depends, are wiped out—what then?

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You can fit this "OFFICE SPECIALTY" Record Safe with Filing Sections to take care of Correspondence, Card Records, Checks—all your valuable business papers.

THE Condition supposed above is no flighty fantasy—no idle conjecture. Fire may visit you anytime. And the only way to insure against loss of your biggest asset—the records which form the backbone of your daily business operations—is to provide adequate protection for them.

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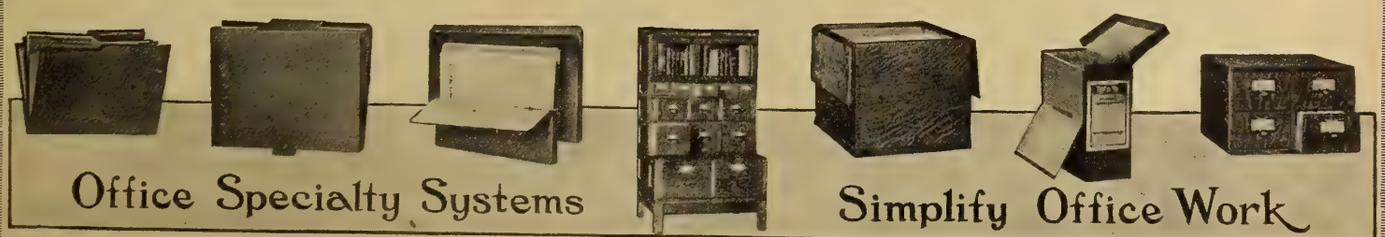
LOSS of business records through fire confronts you every business day. It's a problem you want to prepare to meet squarely. If you'll just write your name and address on the margin of this ad., tear it out and mail back to us, we'll be glad to send you a folder that suggests quite an excellent solution to the problem.

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Canadian Manufacturers using the best kind of Stationery specify

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Ask your Printer to show you our selection of Bond, Writing and Ledger Papers. There is a line for every use, each one being the best in its class.

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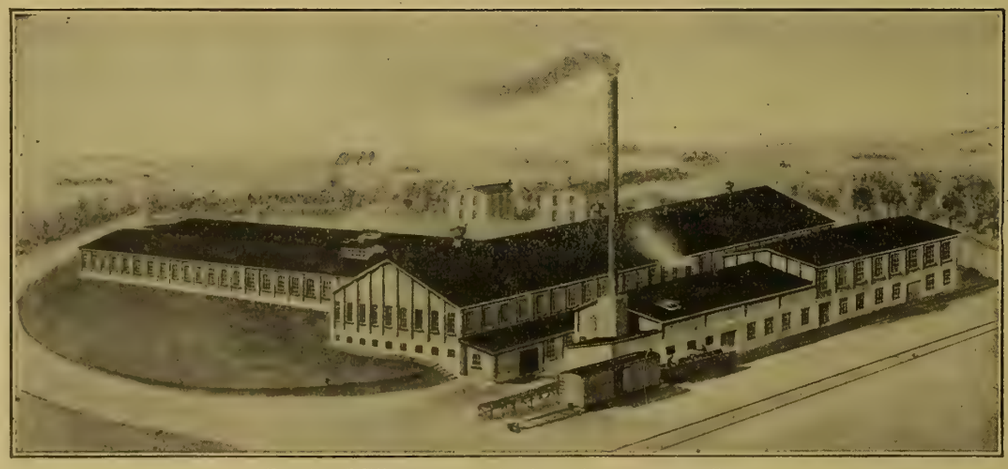
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Has Gained This Prestige By Comparison

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We have an exceptional booklet proving the popularity of Bell-Fast Bond and Bell-Fast Ledger Paper, a copy of which we will gladly send you on request.

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Men forget business cares in the enjoyment of

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A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

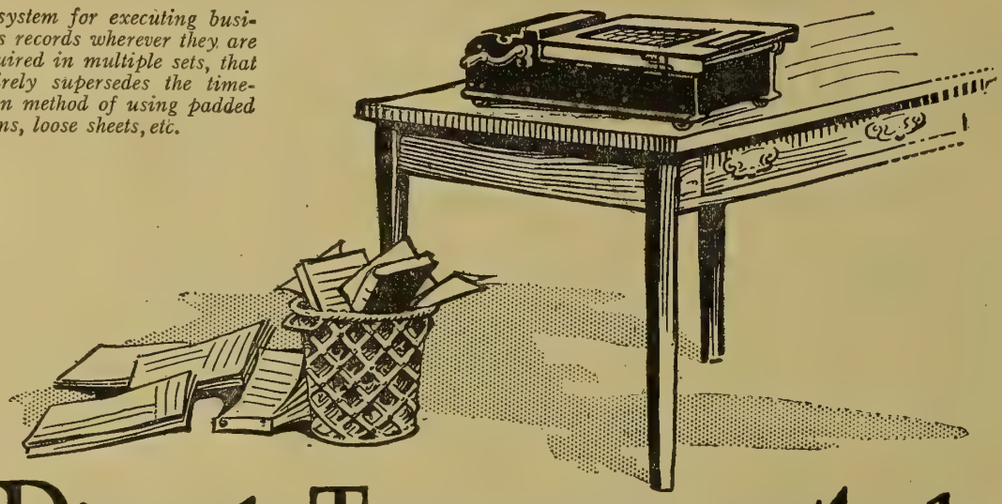
In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

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A system for executing business records wherever they are required in multiple sets, that entirely supersedes the time-worn method of using padded forms, loose sheets, etc.



Discard—Time-worn methods
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HANDLING business records by the time worn method of using padded forms, duplicating books, loose sheets, and carbons, is inefficient, costly and unnecessary.

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"Shouperior" Autographic Registers are more efficient. They offer greater speed, convenience, and economy in operation, and ensure absolute protection.

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The device is easy to operate. It has no complicated mechanism. A turn of the handle delivers the copies, automatically measured.

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Autographic Registers

A System for Executing Business Records

We would like to tell you more about the "Shouperior" System as applied to your particular business. Drop us a card, or better still, let us have copies of the printed forms you are now using. Address nearest office.

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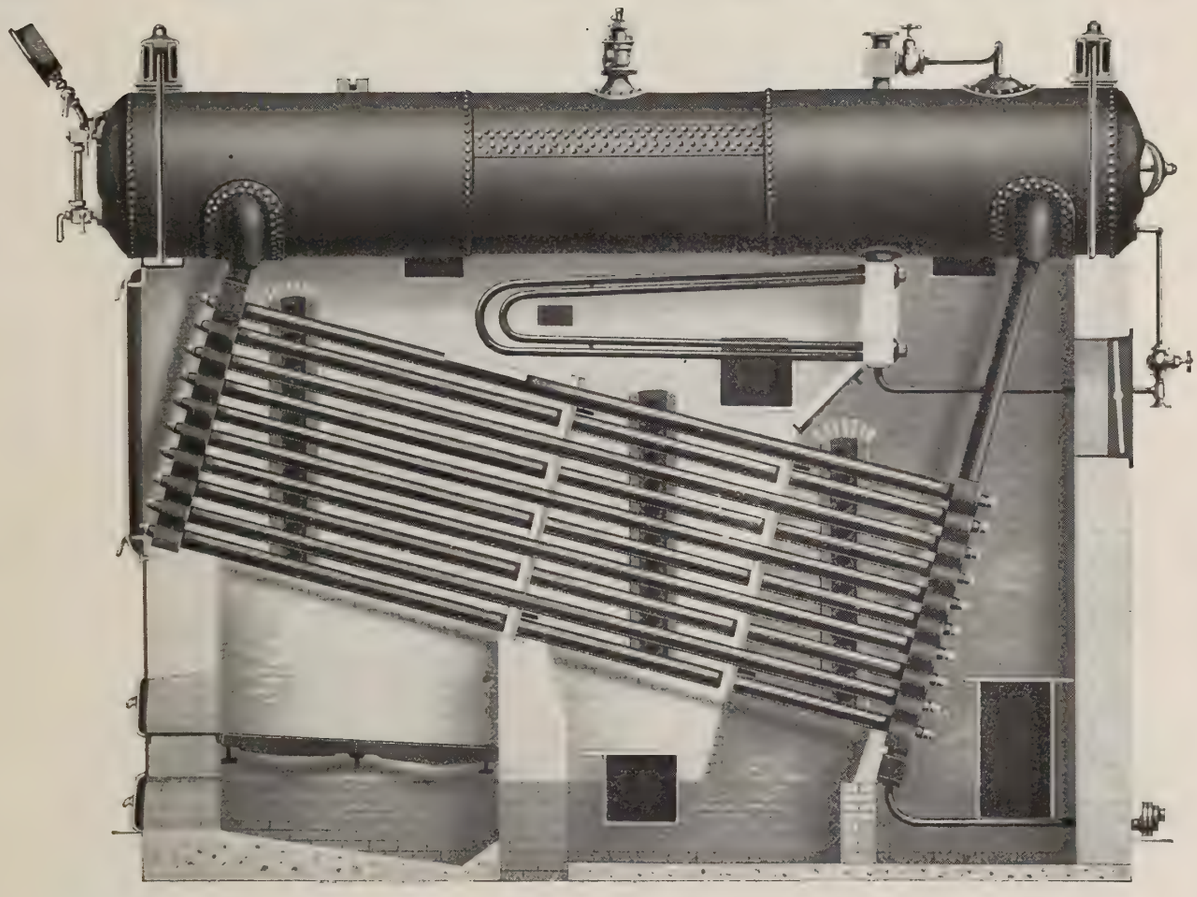
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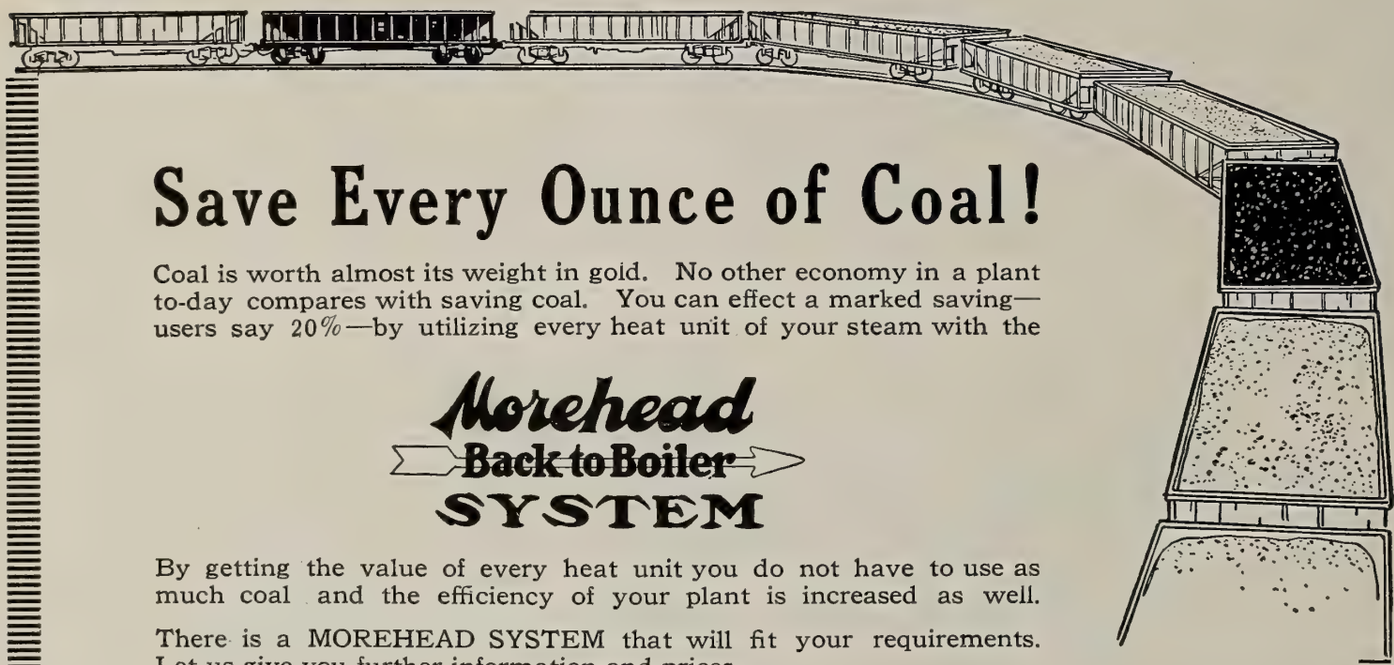
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Canadian Morehead Manufacturing Co.
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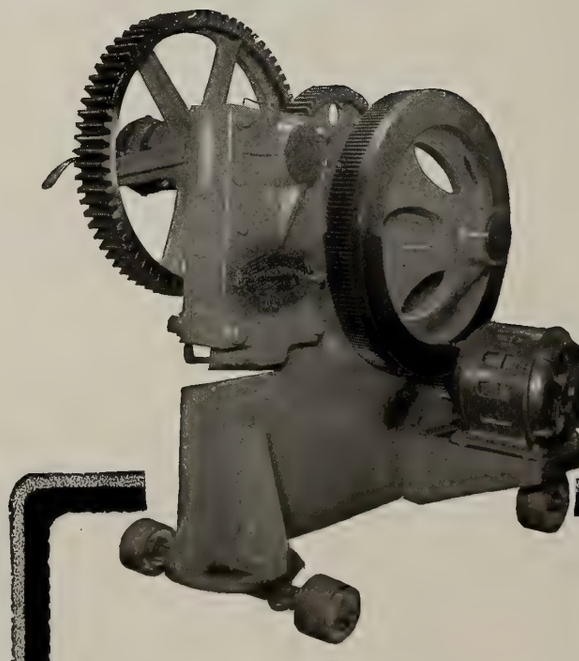
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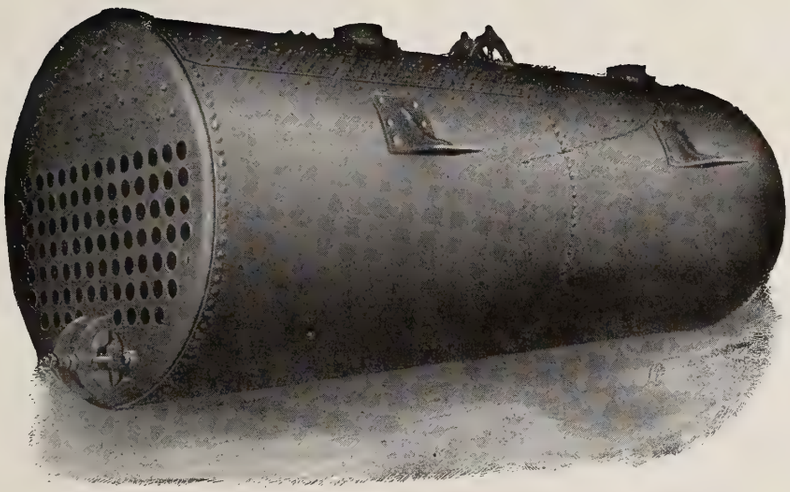


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We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

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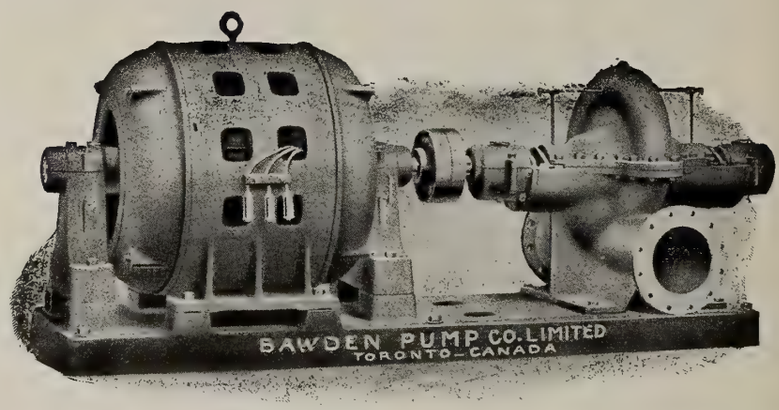
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Quality First
NATIONAL BRANDS

WHITE LEAD
READY MIXED PAINT
COLORS IN OIL
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Steam and Power Centrifugal and Reciprocating Pumps for all purposes.

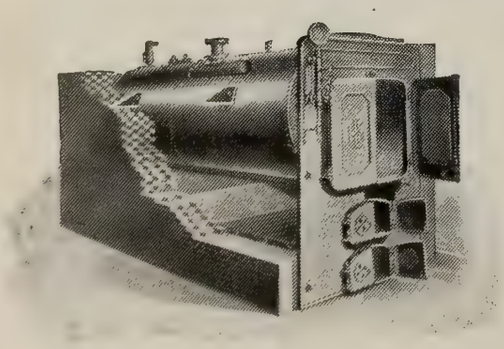
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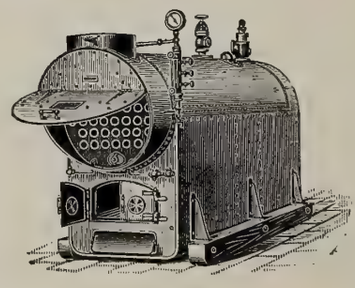
LONDON . . ONTARIO

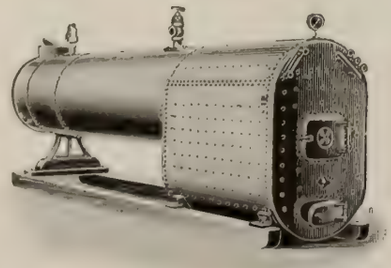


Manufacturers of

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ENGINES

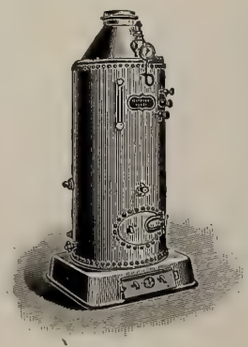
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DIPPER DREDGES
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Given prompt attention.

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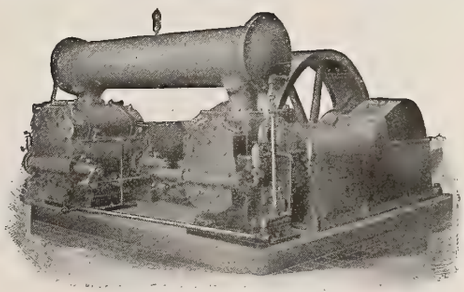


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Industrial locomotives face different conditions. They must work day after day in the hardest service, and often in localities where repairs cannot be made without great inconvenience. That is why we build our industrial locomotives from interchangeable stock parts. With this system every part must fit every other locomotive of the same size and design, and long delays waiting for duplicate parts is avoided. Interchangeable parts kept on hand at our Works for prompt shipment.

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EFFICIENT, RUGGED

Moderate in cost. Built to successfully stand severe and continuous service. Full range of sizes and types.

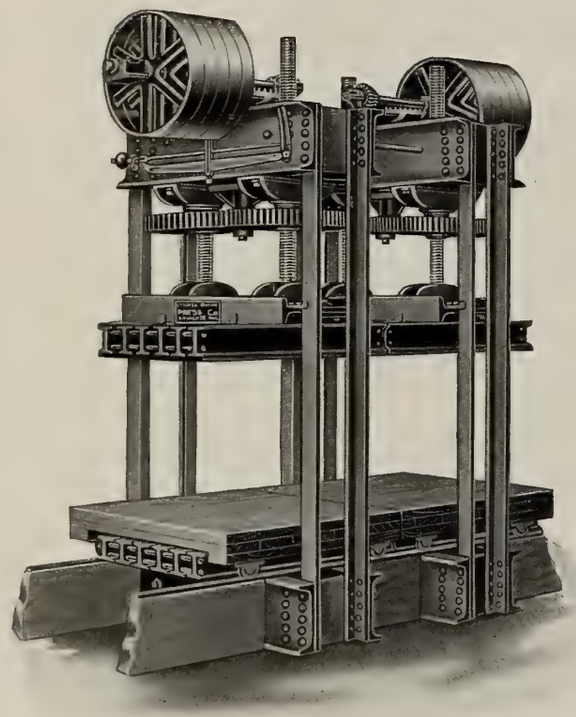
Write for Bulletins

THE JENCKES MACHINE CO., LIMITED

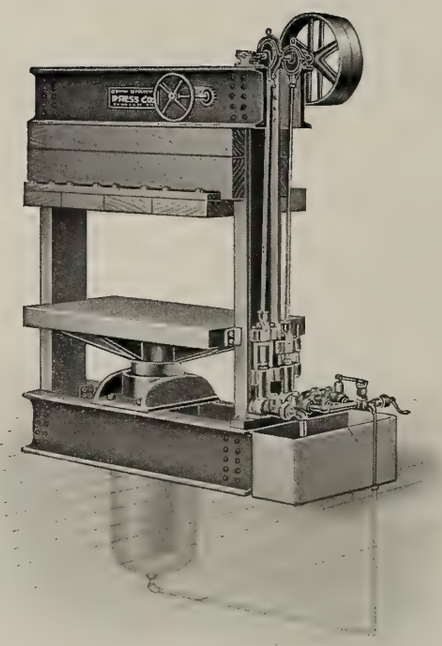
Works:
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St. Catharines, Ont.

Sales Offices:
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Toronto, Cobalt
South Porcupine
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VENEER PRESSES



HYDRAULIC
AND
BELT DRIVEN



HYDRAULIC PUMPS
AND
ACCUMULATORS

WRITE FOR BULLETIN C1

THE HYDRAULIC MACHINERY CO. LIMITED

MONTREAL, CAN.

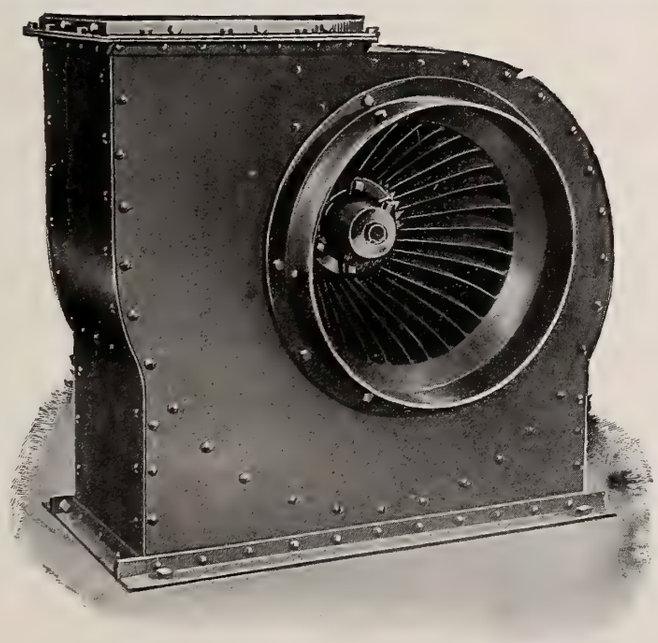
John Morrow Screw & Nut Co.

Limited

INGERSOLL, CANADA

Manufacturers of Milled Screws, Nuts and Twist Drills. Special Screw Machine product quoted upon receipt of samples or blue prints.

Morrow Products are Canadian Made and Guaranteed



Keith Fans

For Heating and Ventilating

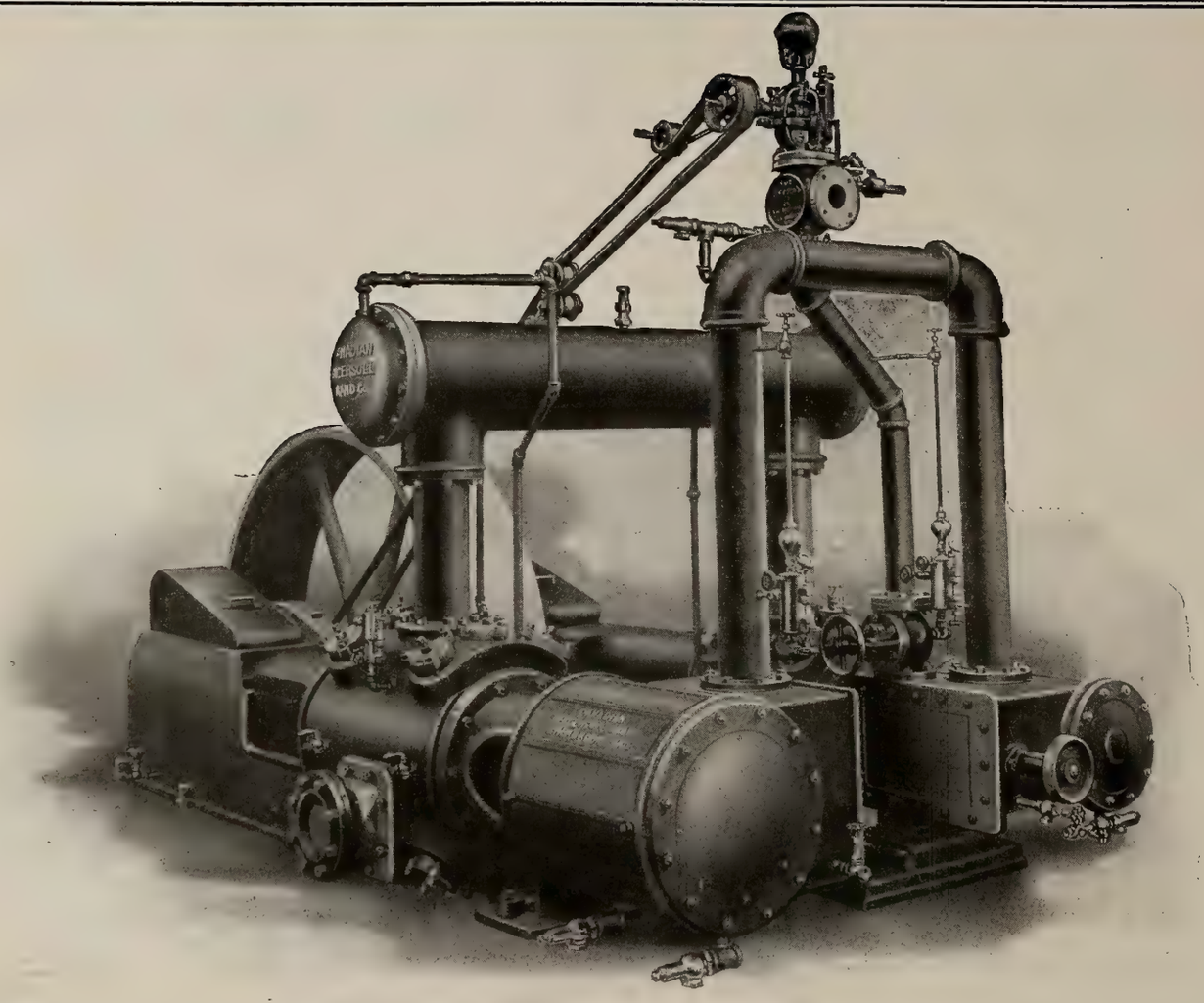
When it comes to a question of Heating and Ventilating the Factory, Church, School or Public Building, it is imperative that you should select the best and most approved system. The **"Keith" Fan** is specially distinguished for giving greater volume with less power than any other Fan made. Get our Keith Fan Catalogue No. 55 and judge for yourself.

SHELDONS LIMITED - GALT, ONTARIO

Toronto Office—911 KENT BUILDING

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Messrs. WALKER'S, LIMITED, 259-261 Stanley Street, Winnipeg, Man.
Messrs. GORMAN, CLANCEY & GRINDLEY, LIMITED, Calgary and Edmonton, Alta.
Messrs. ROBERT HAMILTON & CO., LIMITED, Bank of Ottawa Building, Vancouver, B.C.



Class "RL-3," Duplex Type, Steam Driven, Two Stage Air Compressor with Intercooler. Equipped with Speed and Pressure Governor, Meyer Adjustable Cut-off on High Pressure Steam Cylinder, Dust-proof Construction, Splash and Flood Lubrication System, and "Circo" Silent Leaf Valves
Two sizes : 732 and 1,160 cubic feet displacement respectively

Features Which Mean Economy

EASE OF INSTALLATION : While this type of compressor is practically a solid unit when installed, yet it breaks up into parts handled with ease, and convenient for transportation. The foundation is of a type easily built and the foundation bolts are so disposed as to be easily spaced and readily installed.

LUBRICATION : The flood system of lubrication adopted reduces the mechanical friction losses to a minimum, and the delivery of oil is at all times proportioned to the speed of the machine.

CONVERTIBILITY : This machine may be readily converted to belt drive at any time by simply disconnecting the steam pistons and steam valve gear.

CLEANLINESS : The enclosed construction makes the machine perfectly dust-proof and prevents the escape of oil.

OVER-ALL ECONOMY IN POWER : The "Circo" silent leaf valves secure efficiency in the intake and output of air and reduce valve maintenance to a minimum.

The adjustable steam valve gear enables the steam consumption to be graded to suit the steam pressure and the load, resulting in economy closely approaching that of the releasing type of valve gear.

The liberal water jacketing and ample intercooler surface provided also contribute largely to the sum total of economical production of compressed air by this type of machine.

If you require a compressor of any capacity from 64 to 6,500 cu. ft. displacement per minute, write our nearest branch office stating your requirements. Prices and full information will be promptly sent you. We have many machines under construction of various types and sizes, and good deliveries can usually be made.

CANADIAN INGERSOLL-RAND CO., Limited

COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Sydney Toronto Cobalt Timmins Winnipeg Nelson Vancouver

Works : SHERBROOKE, QUE.

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STERLING QUALITY SAWS







Assurance of the best results, both economic and productive, is found in the constant use of **Atkins Sterling Quality Saws.**

Steel of exceptional quality — that never varies — and the best workmanship has perfected these universally used saws.



Are your results as good as they should be? Try **Atkins Saws** and watch the improvement.

Send for our "C.L." Catalog containing items of interest to you.



E. C. ATKINS & CO., Inc.

Established 1857

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Factory : Hamilton, Ont. *Vancouver Branch : 109 Powell Street*

RECENT INSTALLATIONS

Canadian Kodak Co., Mt. Dennis, Ont., 68 Ormsby Rolling Fire Doors
T. Eaton Co. Factory, Toronto.....57 " " " "
Goodyear Tire & Rubber Co.,
New Toronto .....46 " " " "
International Nickel Co.,
Port Colborne, Ont.....86 " " " "



Ormsby Rolling Steel Doors Have Been Installed In :

Elevator Shafts
Corridors
Passage-Ways
Partition Walls
Fire-Walls
Freight Exits
Car Barns
Stairways
Bakery Stables

Many Recent Installations Show the Merit of This Rolling Fire-Door

LISTED above are several contracts recently placed with us for Ormsby Rolling Steel Doors. Unusual importance attaches to the erection of these factories. They embody many modern ideas. That they called for so many Ormsby Rolling Steel Doors should prompt you to investigate the merits of this fire-door.

Its efficiency as a fire-barrier is proven. Searching tests have been applied to it. It bears the Underwriters' Label—the small capital outlay it involves brings worth-while reduction in fire premiums.

It is also a better door.

Counter-balanced springs make Ormsby Rolling Steel Doors easy to operate—smaller sizes by hand, larger sizes by chain or fool-proof motor.

In case of fire, it is automatically closed by the action of two fusible links.

In whatever position it is installed its strength, rigidity, convenience, neatness are qualities of proven merit.

But it is especially invaluable in the openings of elevator shafts and awkward corners that admit of little room for sliding or swing doors.

In such positions the Ormsby Rolling Steel Door is the only practical solution of the door problem. It takes up less than 3 inches space on either side of the opening and from 10 to 14 inches overhead. It requires no sliding room.

Thus in many old buildings as well as new the installation of Ormsby Rolling Steel Doors brings big economy of space, marked convenience, adequate fire-protection, and appreciable lowering of fire premiums.

Blue prints and full information will be sent on request. Write for them. Ask at the same time about Ormsby service—the quick delivery and quantity production made possible by our eight factories throughout the Dominion.

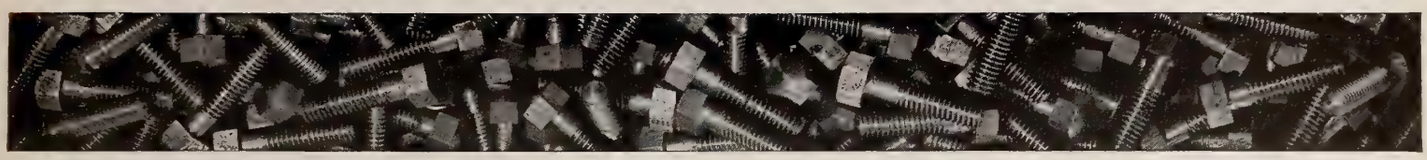
Ormsby Rolling Steel Doors

A. B. ORMSBY CO., Limited, Toronto

Associated with the
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FACTORIES AT
Preston Montreal Winnipeg Saskatoon Calgary

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D. A. Cummings....Brockville, Ont.
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THE

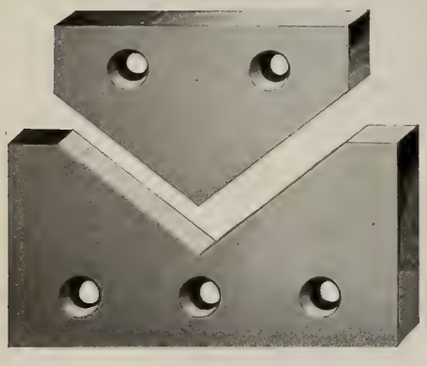
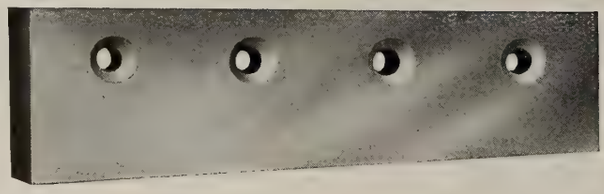
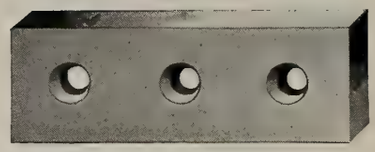
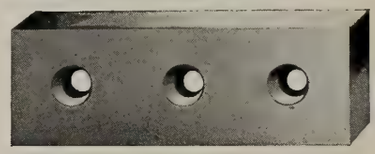
NATIONAL ACME COMPANY

Makers of Screws, Nuts, Studs and Hexagon Brass Nuts in Standard threads and sizes. Also Special Screw Machine Work from Iron, Steel and Brass Bars up to $2\frac{1}{4}$" diameter and $10\frac{1}{2}$" long at

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Metal-Cutting Shear Blades

GALT KNIFE CO.
Limited
GALT ONT.

Tool Room Partitions



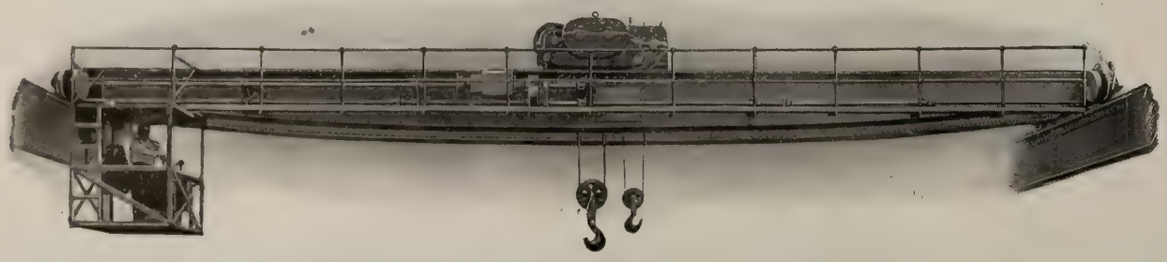
Machinery Guards
Window Guards
and
Wire Work of
every description

WIRE ROPE
ROPE FITTINGS

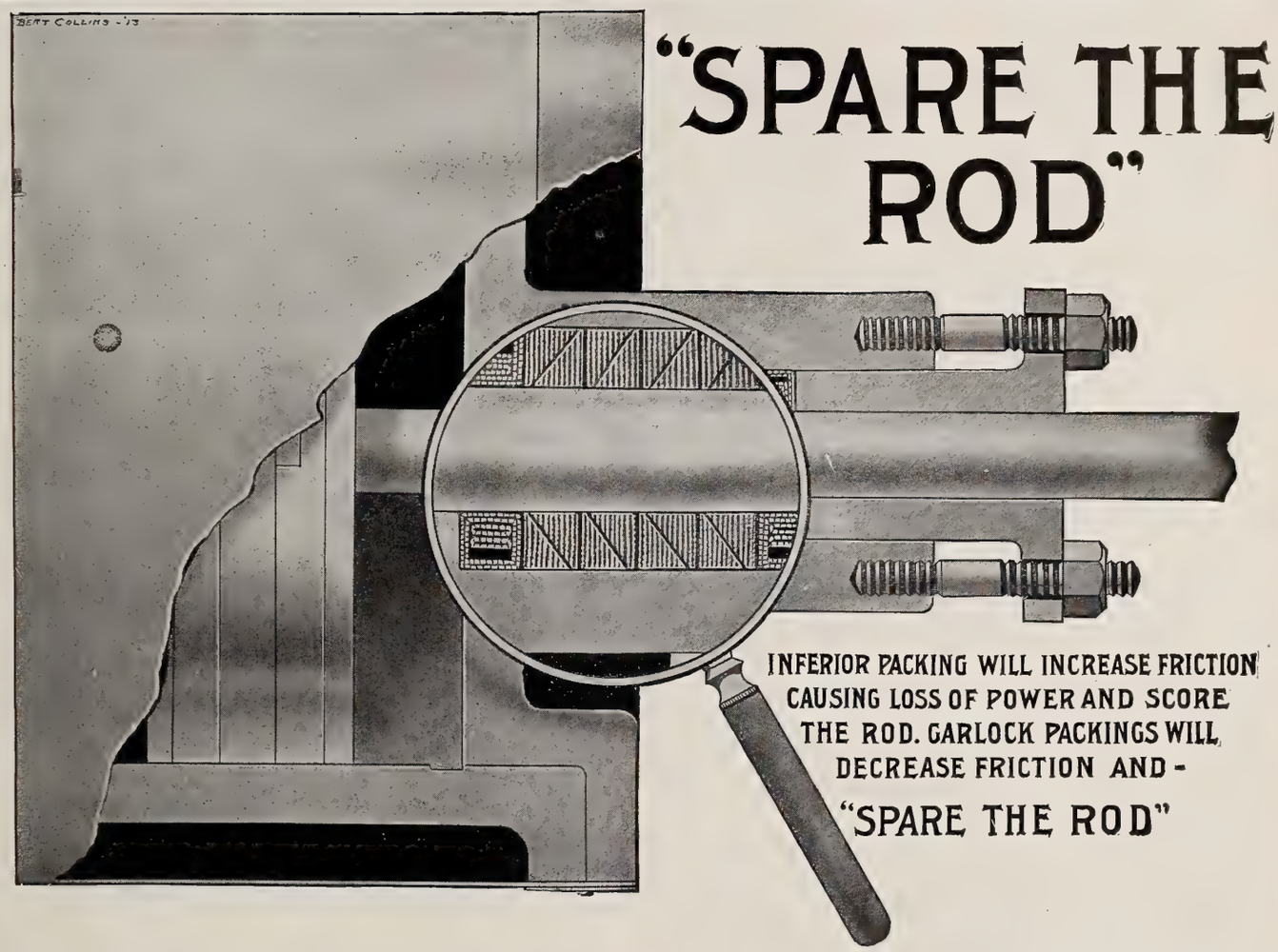
Manufactured by

THE B. GREENING WIRE CO., LIMITED
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ELECTRIC TRAVELING CRANES
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"SPARE THE ROD"

INFERIOR PACKING WILL INCREASE FRICTION CAUSING LOSS OF POWER AND SCORE THE ROD. GARLOCK PACKINGS WILL DECREASE FRICTION AND -

"SPARE THE ROD"

Have You Ever Considered the Loss in Engine Efficiency

due to excessive friction on piston and valve rods caused by the use of inferior and poorly lubricated packing?

A horsepower easily can be absorbed at the stuffing box, and when considered in dollars and cents at the coal pile, the loss would pay for a high-class packing many times over.

THE GARLOCK PACKING COMPANY, Hamilton, Ontario

BRANCHES:

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Toronto, Ontario.....404 Continental Life Bldg.
Winnipeg, Manitoba.....Galt Bldg.



CANADIAN WIRE ROPE

MANUFACTURED BY

The DOMINION WIRE ROPE COMPANY, Limited

Branch: Mail Bldg., TORONTO. Head Office: MONTREAL.

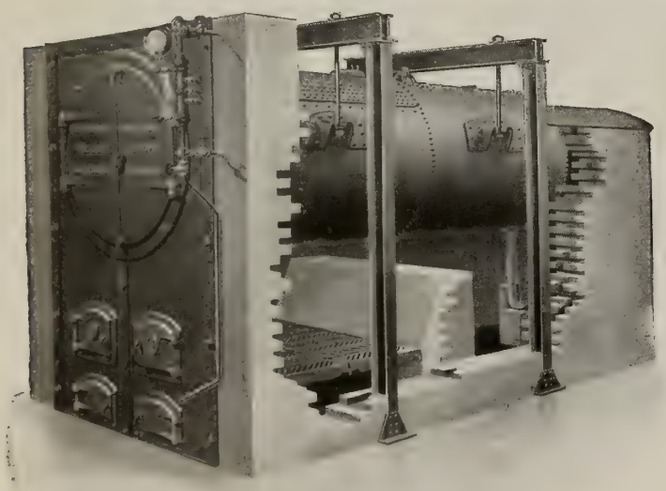
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For Power and Heating

Municipal and Industrial Power and Heating plants all over Canada are using Waterous Boilers.

High efficiency as steam producers, long life and low cost of up-keep make them ideal for most installations.

Have you seen our all-steel settings? Just the thing where compactness is essential. Write for information.



The Waterous Engine Works Co., Ltd., BRANTFORD CANADA

ESTABLISHED 1850

DID YOU EVER NOTICE

that jarring, grinding noise in your machine shop caused by the metal gears?

Wouldn't you like to stop that noise? You can do it by using

NEW PROCESS GEARS RAWHIDE PINIONS

They last indefinitely too

Ask us about it?

R. GARDNER & SON, LIMITED

Nazareth, Brennan and Dalhousie Streets
MONTREAL



Mr. Mill Supply Man!

Put in a line of Babbitt that gives good results in places where ordinary babbitts fall down. That's the way to build up your business. And the "Domeko" line of Babbitt Metals fill the bill. Besides which, there's a liberal jobbers' discount that's mighty attractive.

Write for full particulars



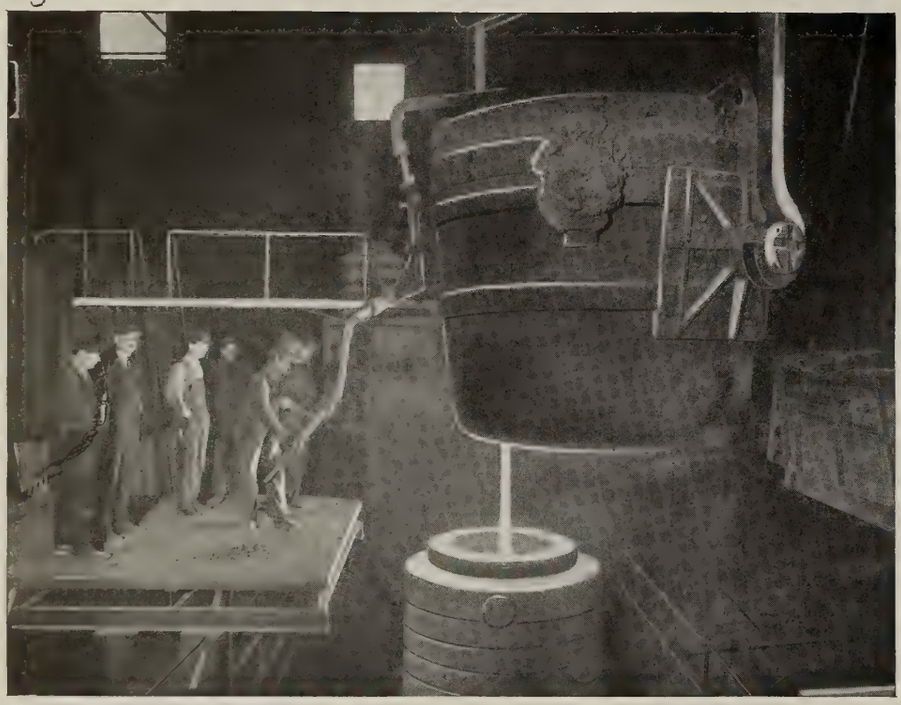
Dominion Metal Company, Limited

FOSS & HILL MACHINERY COMPANY
305 St. James St., Montreal, Que. Selling Agents for Montreal

Sherbrooke, Que.


Quality
Service
STEEL & IRON
PRODUCTS
OF
Every Description
THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON - MONTREAL

OUR FIELD IS THE WHOLE WORLD



A 30-Ton Ingot
being poured
at the
Blast Furnace
at
Sydney Mines
N.S.

"OLD SYDNEY COAL"

Shipped from North Sydney, N.S.

At Wabana, Nfld., the Company's Iron Mines are located, these being the richest in ore on the North American continent.

The Company's Collieries and Blast Furnaces are at Sydney Mines, N.S.

From the Steel Works and Car Works at New Glasgow come the Company's finished manufactured products.

Address All Correspondence to the Head Office

NOVA SCOTIA STEEL & COAL CO.
LIMITED

Head Offices:
NEW GLASGOW, N.S.

GALT SPRINKLER STOKERS

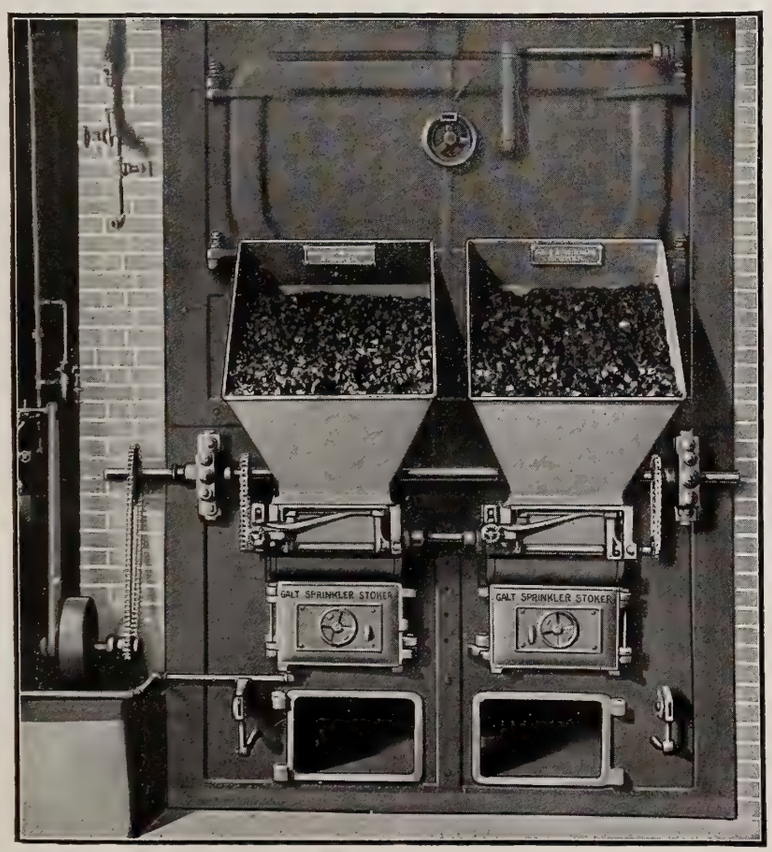
1. Effects a saving in coal from 10% to 20%.
2. Effects a saving in labor from 25% to 50%.
3. Gives a brilliant, thin, perfectly level fire.
4. Gives smokeless combustion.
5. Increases the boiler capacity.
6. Increases the percentage of the CO_2.
7. Burns the fuel completely to the finest ash.
8. Operates for years without need of repair.

Gives 170% boiler capacity on natural draft with a fire three inches thick.

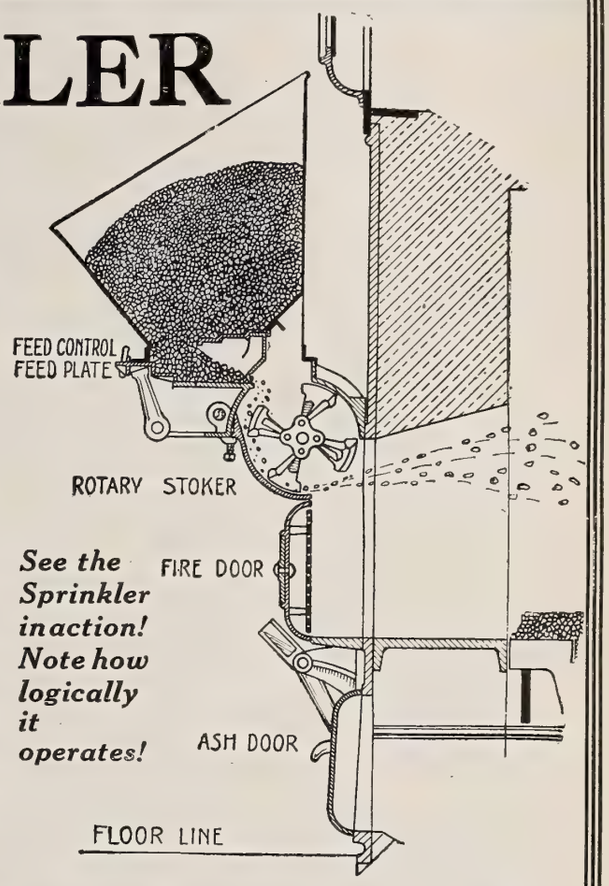
Operates with natural, forced, induced or any kind of draft. Burns any kind of fuel, anthracite, bituminous or lignite.

Galt Sprinkler Stokers fill every practical requirement of a mechanical stoker. Here are a few of the many characteristics of this efficient and economical appliance.

We supply Power-Turbo Blowers, McNaughton Rocking Grates, Damper Regulators and other Power Plant Equipment. Send for illustrated catalog.



Two Type "A" Galt Sprinkler Stokers applied to 150 H.P. Return Tubular Boiler. (Coal Hoppers immediately removable.)



The Stoker mechanicaliy feeds and perfectly spreads the fuel over the entire length and width of your present grates with the fire doors closed, in a light, continuous, uniform stream.

PARTIAL LIST OF RECENT CONTRACTS FOR GALT SPRINKLER STOKERS

The T. Eaton Co., Limited, Winnipeg
The T. Eaton Co., Limited, Toronto
Hinde & Dauch Paper Co., Limited, Toronto
Spanish River Pulp & Paper Co., Sturgeon Falls, Ont.
Dryden Timber & Power Co., Dryden, Ont.
P. Burns & Co., Vancouver, B.C.
Dominion Power & Transmission Co., Hamilton, Ont.
Dominion Oil Cloth Co., Montreal
Corporation of Vegreville, Alberta
City of Winnipeg General Hospital, Winnipeg
Gordon, Ironside & Fares, Winnipeg
City of Brandon, Brandon, Man.
Hamilton Cotton Co., Hamilton, Ont.
Provincial Paper Mills Co., Thorold, Ont.
Lister Chambers, Hamilton, Ont.
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THE GALT FOUNDRY CO.

GALT - ONTARIO

TORONTO: W. M. McRobert. 92 Symington Ave.
Phone Junc. 3354



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BEAVER BRAND METALS

MADE IN CANADA

The following are Beaver Brand Products, all dependable and satisfactory:

Brass, Bronze, Canada Silver and Gilding Metals in Sheets, Rolls, Plates and Rods, also Special Marine Bronze Rod for Shafting and Bearings, and Beaver Brand Spinning Brass and Beaver Brass Rod for Drilling and Free Turning.

Send an order and become acquainted with the merits of Beaver Brand Products.

BROWN'S COPPER AND BRASS ROLLING MILLS, LTD.

GENERAL OFFICES AND MILLS:

NEW TORONTO ONT., CANADA

COPPER & BRASS BROWN'S QUALITY ROLLING MILLS

BANK OF MONTREAL

Established 100 Years (1817-1917)

Capital Paid Up - -	$16,000,000
Rest - - - - - -	16,000,000
Undivided Profits - -	1,557,034
Total Assets - - -	$386,806,887

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Assistant General Manager, A. D. Braithwaite

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

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Agency:

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64 Wall St.	47 Threadneedle St.	108 South La Salle St.

THE CANADIAN BANK OF COMMERCE

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SIR JOHN AIRD, General Manager — H. V. F. JONES, Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 57

THE ROYAL BANK OF CANADA

Incorporated 1869

Capital Authorized	$25,000,000
Capital Paid Up	$12,911,700
Reserve & Undivided Profits	$14,324,000
Total Assets	$295,000,000

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Branches in every Province of the Dominion of Canada and in Newfoundland; in Havana and throughout Cuba, Porto Rico, Dominican Republic, Costa Rica and Venezuela; Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; St. Kitts, Basseterre; Trinidad, Port of Spain, San Fernando; British Guiana, Georgetown, New Amsterdam; British Honduras, Belize.

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ESTABLISHED 1875

IMPERIAL BANK OF CANADA

CAPITAL PAID UP $7,000,000 — **RESERVE FUND $7,000,000**

PELEG HOWLAND, President — E. HAY, General Manager

The Imperial Bank offers exceptional banking facilities to Canadian manufacturers. Branches throughout Canada. Agents and correspondents in all the world centres.

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Domestic and Foreign Exchange bought and sold.

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made at all points in Canada and in foreign centres.

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Accounts of Merchants and Manufacturers solicited.

HEAD OFFICE - TORONTO

UNION BANK
OF CANADA

Established 1865 Head Office, Winnipeg

Paid-up Capital.....$5,000,000 Reserve Fund.....$3,400,000
Total Assets over.....$109,000,000

IN EXTENDING YOUR EXPORT TRADE

you will find the facilities offered by the Union Bank of Canada a decided advantage in handling Drafts, Collections and Foreign Exchange.

The Commercial Information Bureau established in connection with the Foreign Exchange Departments of our London (Eng.), New York and Montreal Offices is at your service.

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6 Princes St., E.C. Haymarket, S.W.

New York Agency : 49 Wall Street, New York City. GEO. WILSON, Agent

Established in 1836. Incorporated by Royal Charter in 1840.

THE BANK OF BRITISH NORTH AMERICA

Paid-up Capital - $4,866,666
Reserve Fund - $3,017,333

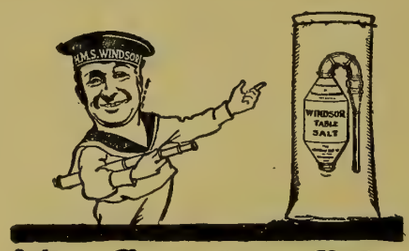
Statement to the Dominion Government (Condensed), 31st August, 1917.

LIABILITIES TO THE PUBLIC.

Notes in Circulation	$ 5,323,922
Deposits	51,126,131
Other Liabilities	1,687,910
	$58,137,963

ASSETS.

Cash on Hand and in Banks	$11,000,888
Deposit with Government o/a Note Circulation	245,822
Government, Municipal and other Securities	11,856,678
Call and Short Loans	5,829,321
Current Loans and Discounts and other Assets	36,213,983
Bank Premises	2,351,592
	$67,498,284



The Canadian Salt Without a Fault

If you wish to impress on a customer the fact that some one article in your store is pure, you can't make a stronger comparison than to say, "It is as pure as Windsor Salt."

Windsor Salt has probably been used in her home for years.

Windsor Table Salt
Made in Canada
THE CANADIAN SALT CO. LIMITED

The Merchants Bank of Canada

Head Office - MONTREAL

Paid-Up Capital - -	$7,000,000
Reserve Funds - -	7,421,292
Total Deposits - -	92,102,072
Total Assets - - -	121,130,558

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Extending from the Atlantic to the Pacific

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New York Agency: 63 and 65 WALL ST.

The Bank of Nova Scotia

ESTABLISHED 1832

Capital.....	$6,500,000
Reserve Fund	12,000,000
Total Assets	Over 110,000,000

158 BRANCHES IN CANADA LOCATED AT ALL PRINCIPAL POINTS. FOREIGN BRANCHES AS FOLLOWS:—

UNITED STATES: Boston, Chicago, New York
CUBA: Havana
PORTO RICO: San Juan
JAMAICA: Kingston and 9 other points.
NEWFOUNDLAND: St. John's and 16 other points.

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The London Joint Stock Bank, Limited

With its widespread system of branches and established connections in Foreign Countries this Bank is especially well equipped to handle the accounts of exporters.

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General Office: Toronto, Canada

H. A. RICHARDSON, General Manager

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H. A. CLARK, Toronto.
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
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Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

W. A. RIDDELL, M.A., Ph.D., Superintendent. Phone Main 5800

HON. F. G. MACDIARMID, Minister of Public Works and Highways.

TRADES AND LABOUR BRANCH

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.
D. M. MEDCALF, Chief Inspector of Steam Boilers.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

TRADES AND LABOUR BRANCH

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.
W. C. McGHIE, Chairman of Board.

W. A. RIDDELL, M.A., Ph.D., Superintendent.

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CANADA

"HOW MANY OF OUR MEN ARE LIABLE TO BE DRAFTED?"

The Canadian business man is asking this question often, now that the Military Service Act is the law of Canada. A simple means of answering it at once is being provided.

Medical Boards are in process of formation throughout the country for the free physical examination of all men who apply. The first class liable to call includes all single men and widowers without children between the ages of 20 and 34 inclusive, all men married after July 6, 1917, being classed as single for the purposes of the Act. In a very short time, the average employer may learn how many of his staff are liable for selection. Those adjudged physically unfit will be given a certificate which will secure them exemption from any Exemption Tribunal. Those found physically fit may still apply for exemption on any ground. The employer will be given a chance to decide if he should seek exemption for any employee whose physical condition renders him liable for selection.

This early medical examination, which quickly decides if a man is liable for selection or not, is a feature of the operation of the Military Service Act calculated to appeal strongly to the business community. It assists in definite planning for the future, enabling an employer of labor to learn at once what men will be left at their work and those who may be removed for military service. Haphazard withdrawals, the nightmare of business men of method and precision, are insured against by this timely arrangement.

Every employer of labor will find it to his advantage to note carefully the formation of Medical Boards in his locality and to be sure that his employees secure as early as possible this very important information as to their status under the Military Service Act.

Issued by The Military Service Council.



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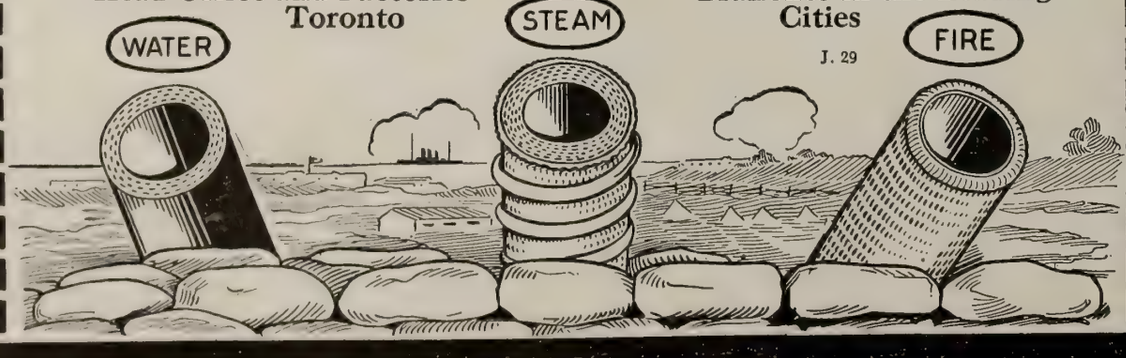
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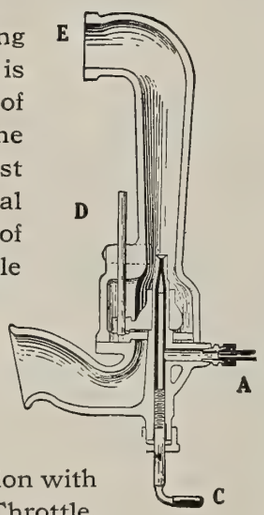
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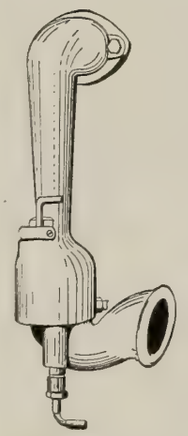
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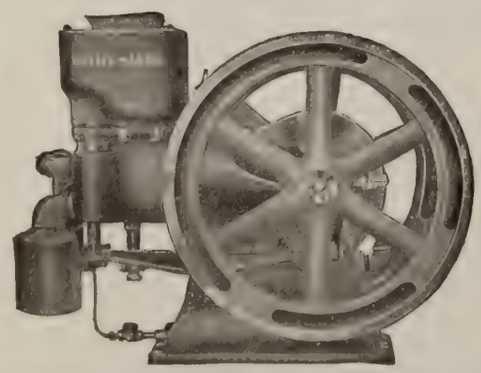
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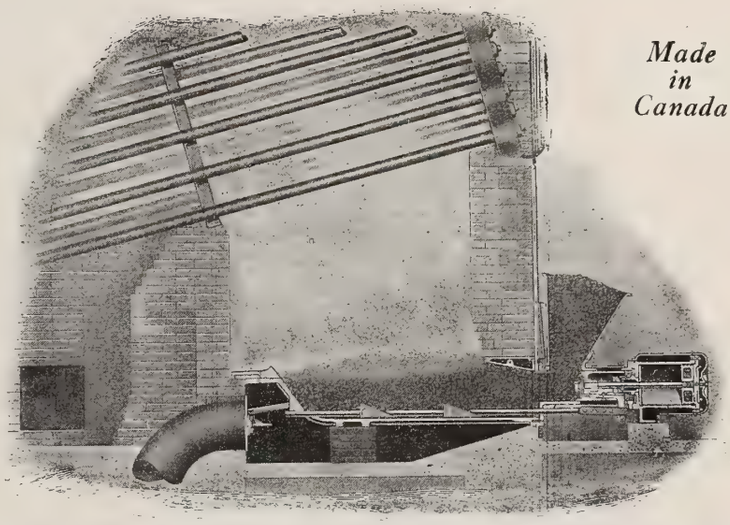
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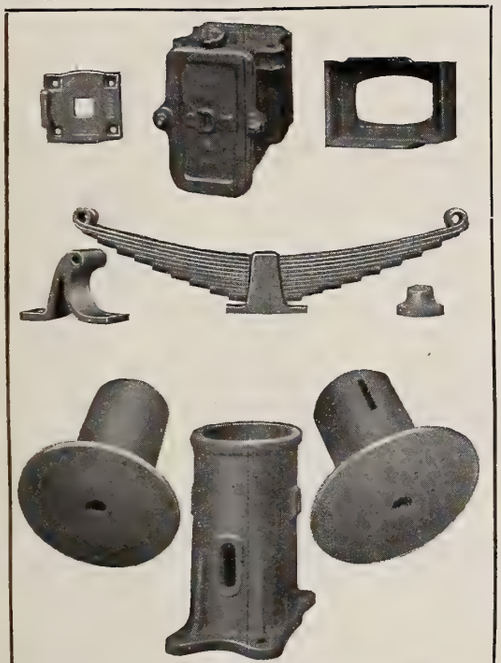
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In every phase of their production, engineering skill of the highest order directs their manufacture.

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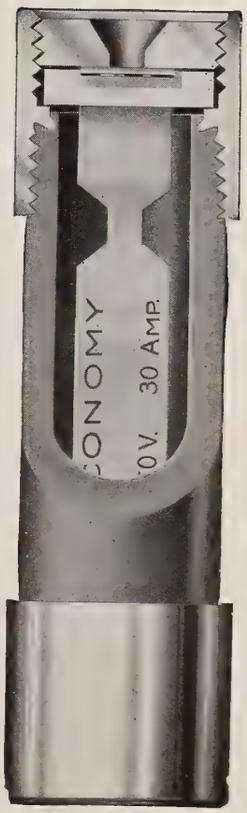
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If you buy fuses it will pay you to investigate the claims made for the Economy Fuse. Drop us a line asking for Catalogue 40, at same time stating capacity and voltage required, and free samples will be sent you. We can show you how to save 80% yearly in fuse costs—a saving you'll admit is worth while. Write us for Catalogue 40 to-day. "Made in Canada."

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Manufacturers in Canada of "S & C" High Potential Fuses—to 150,000 Volts

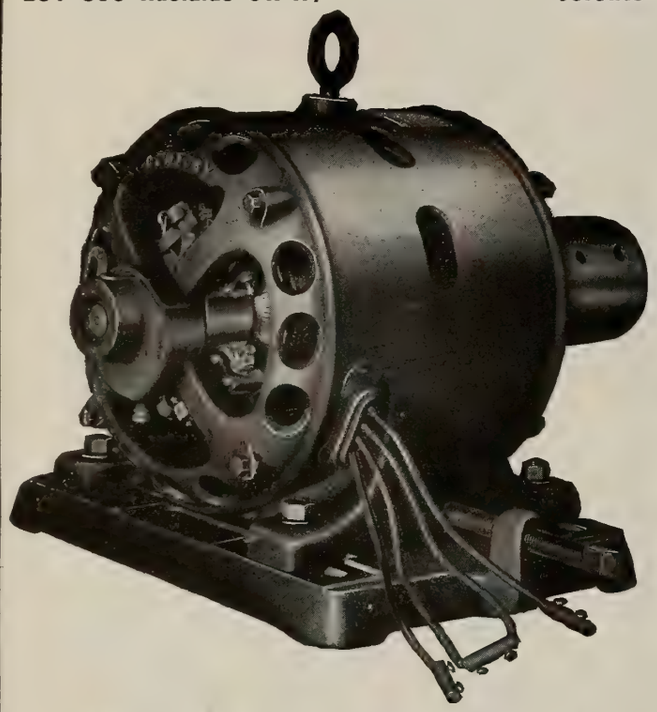


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3	10	1120	220	2	Westinghouse	CCL
2	5	1120	220	2	Westinghouse	CCL
2	5	1720	220	2	Westinghouse	CCL
1	2	1720	220	2	Westinghouse	CCL
1	2	1720	any	2 or 3	Crocker Wheeler to be wound	
3	1	1720	any	2 or 3	Westinghouse to be wound	CCL
2	10	1120	any	3	Westinghouse with Star Delta switch	CCL
1	20	850	220	3	Westinghouse	CCL
2	10	1120	220	3	Westinghouse	CCL
1	5	1120	220	3	Westinghouse	CCL
1	5	1720	220	3	Westinghouse Rewound	CCL
1	3	1720	220	3	Westinghouse	C
1	5	1720	220	3	Westinghouse	C

25 Cycle Motors.

No.	H.P.	R.P.M.	Volts.	Phase.	Make.
1	50	750	550	3	Canadian General Electric, Form K.
1	60	750	550	3	Crocker Wheeler

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2	75 k.w.	C.G.E.-H.G.	60 cycles volt.	1040	115
				2080	230
1	40 k.w.	Pack. R60	60 cycles volt.	2200	220
1	40 k.w.	West.	60 cycles volt.	2200	220
				1100	110
1	2½k.w.	Pack. R10	60 cycles volt.	1100	110
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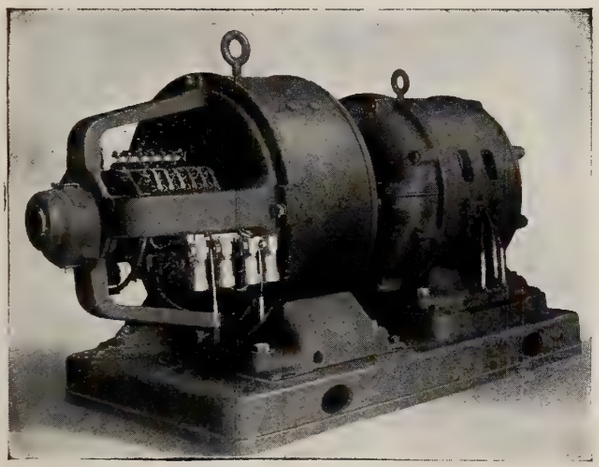
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Westinghouse

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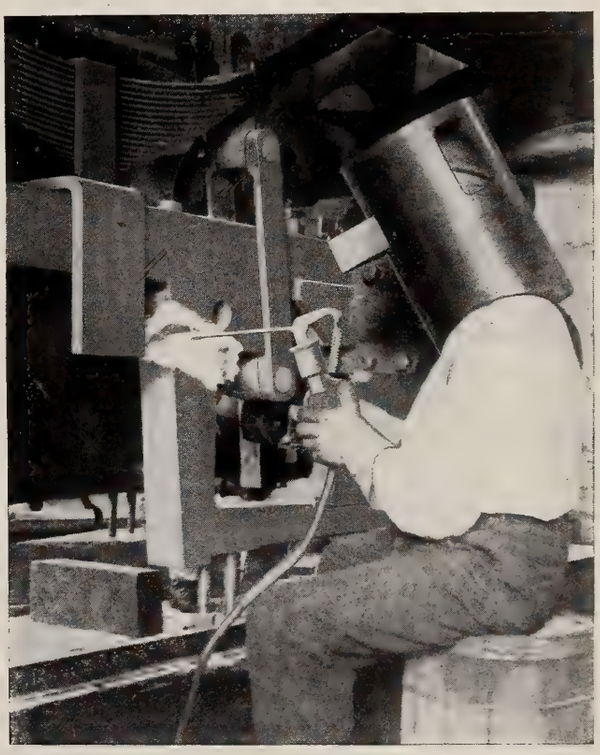


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In addition, Barrett Specification Roofs take the base rate of fire insurance.

This combination of 20-Year Guaranty with low cost and low insurance rate has put these roofs in a class by themselves.

Guaranteed for 20 Years

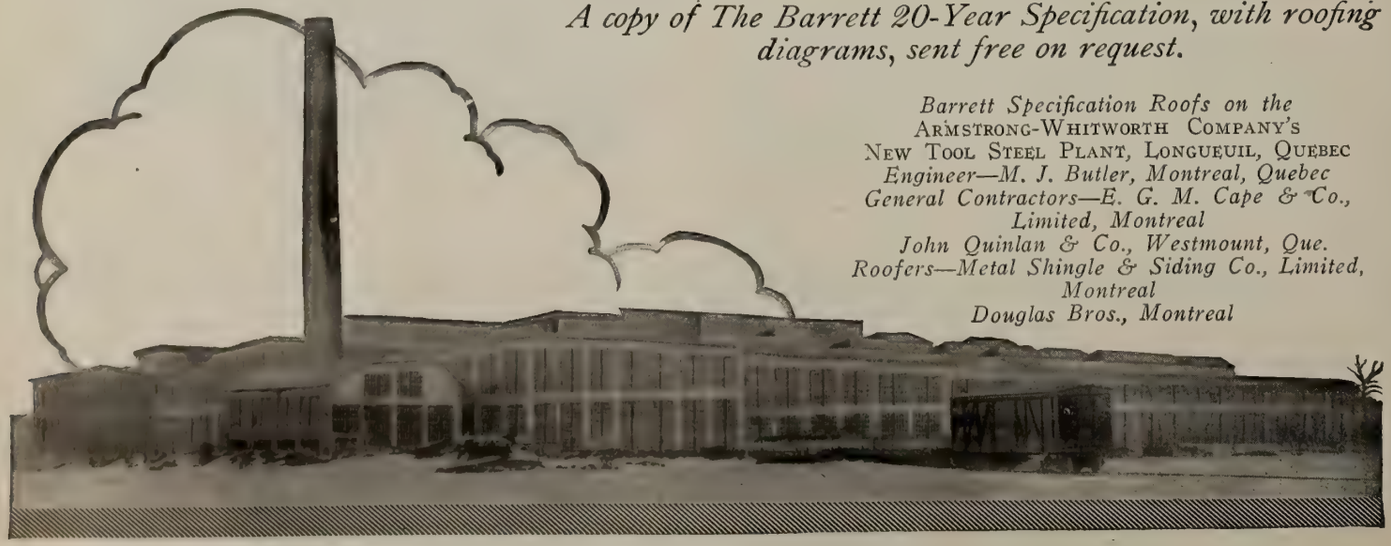
We are now prepared to give a 20-Year Surety Bond Guaranty on every Barrett Specification Roof of fifty squares and over in all towns of 25,000 population and more, *and in smaller places where our Inspection Service is available.*

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MONTREAL TORONTO WINNIPEG VANCOUVER

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Douglas Bros., Montreal

INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVIII. TORONTO, OCTOBER, 1917 No. 6

INDUSTRIAL CANADA

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Prince Edward Island's Hope.

AN event of momentous importance to the people of the gulf province occurred during the last week of September. This was the inauguration of the permanent car ferry service between Cape Tormentine on the New Brunswick coast and Port Borden across the Straits of Northumberland on the island. This is known as the Capes Route and it is the shortest crossing between Prince Edward Island and the mainland. For the present two trips a day will be made by the ferry in either direction, connecting with trains at either dock.

Those conversant with affairs on Prince Edward Island have been aware that the difficulty of maintaining year-round connection with the mainland has long been one of the principal grievances of the inhabitants. In summer the alternate routes between Pictou and Charlottetown and Point du Chene and Summerside were easily maintained, but when the ice drifted into the Straits of Northumberland during the winter months, serious obstacles were encountered and the island was cut off for considerable intervals. The efforts made to keep up communication have formed material for one of the most entertaining Canadian novels yet written, which shows that the problem has had a romantic as well as a practical interest.

By way of relief, the construction of a tunnel was mooted. This project was no fanciful invention. It was actually planned, and among its promoters were many of the sanest men on the island. Ottawa considered it; weighed the pros and cons, and finally decided against it. As an alternative, a powerful, ice-breaking car ferry was suggested. This ferry has been built. It operated all last winter as an ordinary steamboat between Pictou and Charlottetown and demonstrated its ability to keep open a line of communication across the straits. With the completion of the terminals at Cape Tormentine and Port Borden, it will now go on the route for which it was planned.

Included in the general scheme was the conversion of the Prince Edward Island Railway from its present narrow gauge to the standard gauge, so that cars might be hauled to any desired destination on the Island. As yet this part of the project has not been ventured upon and cars will merely be landed at Port Borden and their contents handled through a transfer shed to cars of the Island Railway. This in itself is a considerable improvement, as it reduces the necessity of transferring freight very considerably.

Facility of transportation is always an aid to business and manufacturers all over Canada will welcome the improvement in the means of access to Prince Edward Island which is now to be provided by the new car ferry.

The Coming War Loan.

WHAT a hearty spirit of co-operation can accomplish is to be demonstrated by the campaign soon to be inaugurated in connection with the raising of Canada's fourth war loan. In the early stages of organization it became apparent that the selling methods employed in the previous war loan campaigns would never bring the desired results. The competitive idea is all right enough, and desirable, in ordinary business, where manufacturers or merchants are selling products of differing values and where skilful salesmanship is necessary.

But war bonds, like postage stamps, are identical and there is no good purpose to be gained by setting loose a lot of salesmen to compete with each other in selling them. They will invariably flock around the big prospect and neglect the little fellow.

This time the loan must be made a popular one. An appeal must be made to every man and woman, who can possibly scrape together enough money to buy a $50 bond, to lend that money to the government. To reach such investors the field must be thoroughly organized, so that within the two weeks that the selling campaign is on, each and every prospective purchaser will be personally canvassed. The competitive plan is not big enough to accomplish this; the co-operative plan must be employed.

We hope that Canadian manufacturers will co-operate to the fullest extent possible in making the loan a success. The government will ask for $150,000,000. It can doubtless do with more. By introducing schemes, under which employees will be assisted in buying bonds; by putting in a suggestive word here and there; by allowing canvassers, who will, of course, be government agents, free access to work rooms, and by giving publicity to such advertising matter as will be sent, much can be done to help.

The advertising campaign will be an eye-opener. Here again co-operative methods have been introduced and the best advertising experience available has been called in. It will not be the fault of those charged with this publicity work, if every citizen of Canada is not apprised of the nation's needs and of how investment in the war loan will further those ends which we all have so much at heart.

Clubbing to Buy War Certificates.

THE sale of war savings certificates has been carried on in Canada very quietly and so far with little effort to popularize the business. Notwithstanding, results have been creditable and quite a large sum of money has already been raised in this way. We have heard of several instances where methodical efforts have been made to interest factory hands in these issues and, through a regular and systematic canvass of employees, to place certificates with them.

A plan adopted in Australia, where the sale of certificates seems to have been started in a much more widely-advertised way, may be of interest to those manufacturers who would like to see their hands participating in the business. There, clubs are formed for the purpose. Each member agrees to contribute weekly a small sum of money. This sum is frequently just sufficient, when all contributions are in, to make up an amount equivalent to the purchase price of a certificate. The club secretary takes the money and buys one forthwith. The next week a second certificate is bought, and so on until each member has contributed enough to buy one for him or herself.

Apart from the idea of systematic saving, which is greatly encouraged by this co-operative method, the scheme has this advantage. Ordinarily, a man would have to keep on saving, say twenty-five cents a week, for thirty-five weeks, before he could buy a $10 certificate. Technically, club members do exactly the same thing. The difference, however, is that by clubbing together, a certificate can be bought each week. This means that each certificate is dated one, two, three, up to thirty-five weeks before the final date of payment. There is an interest advantage in this, which is especially pronounced in the case of the first certificate. If certificates are allotted by lot, the member who gets certificate number one gets a premium on his investment, and so on, in lessening degree, down to the last certificate.

The idea is commended to all manufacturers who would like to see their staffs buying certificates. It is not only applicable to factory employees but to office staffs, and requires very little organization.

The Triumph at Quebec.

IT would ill become a publication, which speaks officially for the manufacturers of Canada, were not a word of congratulation extended to the men responsible for the erection of the giant cantilever bridge across the St. Lawrence River at Quebec. Though the actual work of construction was performed by a private corporation, the undertaking was national in its scope. Canadians from coast to coast watched the final and critical effort with anxiety and concern, as if the nation's credit were directly at stake. Viewed in this light, the engineering triumph achieved by the St. Lawrence Bridge Company was one in which the whole Canadian people shared, and a nation's thanks are due to the engineering and erecting forces which have at last, after years of effort and disappointment, achieved the splendid feat of erecting the greatest cantilever structure in the world.

Always the Other Fellow.

WHETHER we like to admit it or not, the war has made pretty nearly everybody in Canada prosperous. Those who aren't prosperous have themselves largely to blame for it. Looking about us, we see more genuine prosperity scattered around than ever before in the history of the country. People are better dressed; they have more comforts in their homes; they eat nicer things and most of them enjoy themselves more than they ever did.

All of which makes us rather sick at the talk of profiteering—the singling out of individuals and the reproaching of them for making money out of the sufferings

of their fellow men. As for that, we are all profiteers—manufacturers, merchants, bankers and, quite as much proportionately as anyone else, the workingman. Canadians, both as a nation and as individuals, are profiting by the war, and it is sheer hypocrisy for any one man to accuse any other man of making a good thing out of the opportunities now afforded for accumulating wealth. It is after all merely a matter of degree and where is the line to be drawn?

Human beings have always had a way with them of envying or blaming the other fellow. An artisan, who has had his wages doubled, if not better, since the war started; who now drives his own motor car; goes for his Sunday pleasure trips; and gets a whole lot of satisfaction out of life, with very little responsibility thrown in, exclaims in holy horror at the wickedness of the manufacturer, who is "soaking" the country for profits. Even certain manufacturers are not above lamenting at the degeneracy of their munition-making brethren in piling up reputedly enormous profits. Men in one class invariably allege that all the wickedness of accumulating war profits belongs to men in some other class, they themselves being quite uncontaminated.

Of course, we know there are unprincipled fellows who are quite indifferent to the terrible causes which are making present conditions so prosperous, and they are to be found in every walk of life. Each man must be his own judge in that regard. What does, however, strike us as utter humbug is the everlasting effort to label every manufacturer, just because he is a manufacturer, a profiteer. Critics should first make absolutely sure that they are entirely blameless themselves before they begin to throw stones. More than that they should make sure that the object of their scorn has not perhaps done more than they have proportionately in patriotic endeavor.

Bringing East and West Together.

WHILE some may doubt the wisdom of government subsidizing of the press, there are probably very few who are prepared to find fault with the grant of money which has made possible the establishment of a 24-hour leased wire service from Halifax to Victoria. Canada, with its immense distances and its tendency towards provincialism, needed this service and, while perhaps it might have been desirable—if it had been possible—for the press to have financed the scheme itself and kept free of any suspicion of receiving favors from the government, yet it is a good thing that the service has been established in any case.

It is interesting to note that it was very largely the papers with a leaning towards free trade which were in the forefront in petitioning for assistance. The argument that carried weight with the government was that it was impossible—and yet nationally desirable—for the Canadian press to maintain a news service across the barren stretches lying between New Brunswick and Quebec; Ontario and Manitoba; Alberta and the Coast. American-manufactured news was coming in from New York, St. Paul and Seattle, but the Canadian product was not circulating owing to physical and other disabilities. In other words, the Canadian industry was finding it difficult to compete with the American industry.

We do not hear that any free trade newspaper objected to the formulation of a protectionist policy for the handling of Canadian news. True, there has been no barrier erected to the importation of American news, but by their tacit admission that a government subsidy was necessary so that the desirable object of building up a Canadian news system might be achieved, the press of the country unquestionably admitted that the basic idea of protection is good.

Apart from this view of the matter, which is merely an aside, we are glad as manufacturers that the service has been established. It will tend to give the agricultural interests of the west a clearer understanding of what is going on in the east and, *vice versa,* it will keep the manufacturing interests of the east better informed on western happenings. If the real purpose of the scheme is carried out, we will be reading about each other every day; we will be becoming better acquainted and in the end will realize that the interests of all are bound up together for the common good of the Dominion.

DEATH OF WINNIPEG MANUFACTURER.

Lachlan C. Macintyre, Former Vice-President of Canadian Manufacturers Association, Passes Away.

The death occurred last month in Winnipeg of Lachlan C. Macintyre, a prominent western manufacturer and Manitoba vice-president of the Canadian Manufacturers Association for 1916-17. Mr. Macintyre's immediate connection was with the Paulin-Chambers Company, manufacturers of biscuits and confectionery, of which firm he was for many years managing director. He was born in 1850 near Beaverton, Ont., and went to Winnipeg in 1882, where he became connected with the Turner, McKeand Co. He later joined the firm of Paulin-Chambers Co., with which he has since been continuously associated. For nearly thirty years Mr. Macintyre was actively connected with the North-West Commercial Travellers' Association and his death will be keenly felt by the travelling fraternity.



Lachlan C. Macintyre

MANUFACTURERS IN THE WAR

By H. MACDONALD
Acting Assistant Secretary, Toronto Branch, Canadian Manufacturers Association

IN the present unprecedented crisis in which our destiny is so seriously involved, it becomes our solemn duty to appraise and determine what services we as an organization of Canadian manufacturers can perform for our country's needs. Patriotism is not confined to the splendour of military or naval valor. Loyal service and patriotic impulse are just as necessary in industry and agriculture as on the bloody sector of a battlefield. The precision of the gunner in actual battle is no more important than the precision of the mechanic in whose hands the gun is made. Both are compatriots; both are an honour to the flag for which they fight and labor.

There can be no comprehensive ready-made plan for solving all after-war problems. Many questions will be settled, not by business men alone, but in co-operation with the disbanded army. But we can help them by doing now what is easily demonstrated to be the right thing at the present time. During the war we have grown apace in mechanical power. We may use it or waste it, as we choose, when peace returns. The decision rests ultimately with the general public, but their trustees in the meantime are the Government and the owners, managers and workers of the industries. The longer the war lasts the more necessary it is to get ready for what will follow, because the road to economic recovery will naturally grow steeper and rougher as time passes, in destruction and devastation. In this critical time all partisanship should be displaced. All elements that make up our vast industrial and commercial fabric should be united and working to a common end.

Co-ordination and Co-operation.

The manufacturers must perfect every process. This means co-ordination, co-operation and intelligent direction. It means the standards for labor and production, which have been evolved by patient effort in the past years, are to remain the rules of conduct in the gigantic task of industry in its support of the Government. Never in our history has the opportunity been presented to demonstrate to the world the real patriotism of Canadian industry. We are being nationalized as a people, and our vast industrial resources are being integrated. We are translating the present into a future of industrial security and tranquility.

Recognizing, therefore, the grave issues and responsibilities confronting us as a nation, and the misconstruction which might be placed upon the silence of manufacturers, the Canadian Manufacturers Association, through its President, Mr. S. R. Parsons, of Toronto, and members of the Executive, presented to Sir Robert Borden at Ottawa, last month, a comprehensive, illuminating and definite resolution adopted unanimously by the Executive Council, with recommendations designed to meet that situation, and invoking the aid of the Government to bring about a co-operation which would help Canada in the war. A further resolution of the Prairie Provinces Branch to the same effect, passed at a special meeting in Winnipeg, was submitted.

The delegation pledged support to the immediate enforcement of the Military Service Act, advocating a national non-party Government, and the inclusion of a larger representation of manufacturers and business men in the Government, and supporting the imposition of a fair income tax as being the best means of raising the increased revenue which the country now needs because of war conditions.

National Government Desired.

Strictly non-partisan and non-sectional, the Association represents the greatest industries in the country. Almost from the beginning of the war it has advocated that organized and systematic efforts should be used to obtain recruits so as to interfere as little as possible with the agricultural and manufacturing industries of the country, especially in the matter of highly skilled labor required for the production of supplies necessary for the prosecution of the war. The military situation calls for immediate action, and we believe that the voluntary methods of recruiting having fallen down, the best and fairest measure is by means of the selective draft. To this end a National Government that will represent all great interests and sections of the country, as far as possible, could best administer the Act recently passed, and secure national unity.

The manufacturers have entered into obligations with respect to the re-engagement of many men at the front, and as great problems will arise in connection with the employment of labor after the war, it is felt that manufacturers are especially qualified to advise now and later. Omitting the question of domestic trade the exports of Canada for the year ending March, 1917, show that manufacturers exported nearly $100,000,000 worth more than agriculturists. While it is recognized that recent years have shown abnormal figures on account of munitions manufacturing, it is also realized that agricultural products have shown abnormal values. In any event, manufacturers must play a very important part in the future history of Canada. It is, therefore, felt that they are working within reasonable and proper limits when they ask for a large representation of manufacturers and business men in the Government and Parliament of Canada.

After the war Canada must export largely of manufactured products, not only to help preserve the balance of trade, but to give employment to labor. Competitive conditions throughout the world will make necessary

governmental direction and aid; the Government, therefore, should be in a position to receive from the members of the Cabinet the particular information required.

It will thus be seen that the resolutions presented to the Premier represented something more than a mere formal presentation of words. They rather expressed the awakening of the manufacturer to the necessity of taking his proper place in the public life of the country, a realization which cannot fail to be of benefit to all.

The delegation was representative of manufacturers throughout Canada, and the resolution with which it was entrusted is as follows:

Whereas at our recent Annual Meeting in Winnipeg, a resolution was passed, without a dissenting voice, pledging the Association to support whatever measure of conscription might be brought in by the Government;

And whereas the Military Service Bill, embodying the principle of conscription by means of the selective draft, has since received the endorsement of a large majority of the Members of Parliament, and been placed upon the statute books;

Therefore be it resolved that we, the members of the Executive Council of the Canadian Manufacturers Association, hereby pledge ourselves loyally to support the measure, even at the cost of much inconvenience and loss arising from present labor conditions, and to do everything in our power to make possible the complete carrying out of the provisions of the Act;

We further express our united opinion that at the present time, when not a moment should be lost in providing necessary reinforcements for our brave troops at the front, it is essential that the Cabinet be reorganized along lines that will secure the fullest possible measure of national unity and co-operation. We believe that a larger proportion of business men than heretofore should be included, and that there should be adequate representation of the manufacturing industries of the country, as well as agriculture and labor.

We further recommend to our members throughout the Dominion that, in view of the grave issues and responsibilities confronting us as a nation, they submerge purely party politics and make sure that candidates in their different ridings, at the forthcoming elections, are first and foremost men who will, without fear or favor, support such a Government in its efforts for the winning of the war above every other consideration.

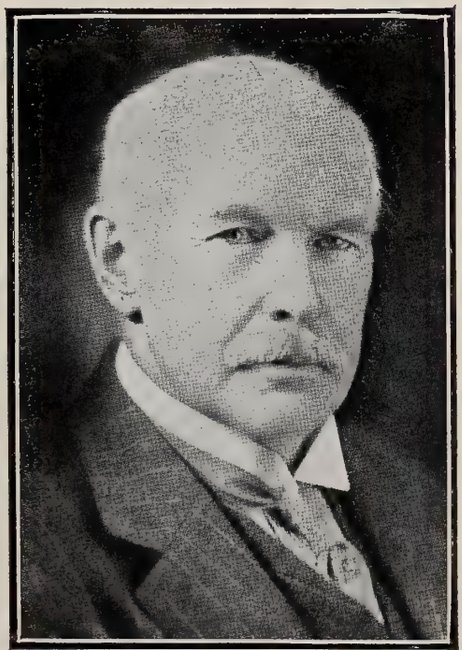
In view of extraordinary war expenditures we further place ourselves on record in favor of a financial policy which, while adequately providing for the initiation, maintenance and expansion of industry, without danger of same being crippled or strangled, will place a reasonable tax upon the enterprises and wealth-producing power of the country through channels of commerce, finance and all other avenues, so that each individual or unit will bear a fair and proper share of the burden. In this connection we are of the opinion that in addition to ordinary sources of revenue an income tax, properly adjusted and applied, is a fair method of reaching the end desired.

The evidence of approval with which the delegation was received by the Premier and Minister of Finance, who was also present, was proof that they appreciated its full significance.



—British & Colonial Press

Lt.-Col. C. N. Monsarrat
Chairman, Quebec Bridge Commission
Appointed by the Government



—British & Colonial Press

Phelps Johnson
President, Dominion Bridge Co., Limited
and St. Lawrence Bridge Co.



—British & Colonial Press

G. H. Duggan
Vice-president and Managing Director,
Dominion Bridge Co.

NOTABLE FIGURES IN CONNECTION WITH QUEBEC BRIDGE ERECTION



The Quebec Bridge with Central Span in Position

THE TRIUMPH AT QUEBEC

Historic Achievement Recorded when Great Central Span, weighing 5080 tons, is Raised 150 feet from River Level to Floor of Giant Cantilever Arms, and Communication is Established between North and South Shores

WITH the fastening in place on Thursday, September 20, of the huge central span of the Quebec Bridge, one of the most notable achievements in Canadian engineering was brought to a successful conclusion. For days, the people of Canada, apprised through the press of the progress of lifting operations, held their breath in fear and trembling lest there should be repeated again the tragedy of 1916. Fortunately alike for the men who were hazarding their lives in the operation, for the credit of the engineers and for the fair name of Canada, no accident occurred. The long-protracted tension was relaxed and the connecting-up was safely accomplished.

The Quebec Bridge forms an important link in the great National Transcontinental Railway project inaugurated in the early years of the century. Striking westward from Moncton the N.T.R. crosses New Brunswick, hugs the International boundary around the northern bulge of Maine and strikes the St. Lawrence River a few miles above Point Levi. From the other side of the river it continues westward to the St. Maurice River Valley, up which it passes to the hinterland of Quebec, thence running due west to Winnipeg and so to Edmonton, Prince Rupert and the Pacific Coast. With the exception of the gap at Quebec, temporarily filled by the operation of the car ferry *Leonard*, the entire system has been in operation for some time past and, though on large sections, traffic has been light, the road will eventually prove an important route from Atlantic to Pacific.

The Two Catastrophes.

The work of constructing the big bridge above Quebec was confided to the Quebec Bridge & Railway Company, an organization formed for the purpose. Erection was started in due course and all was progressing favorably when on August 29, 1907, the south cantilever arm collapsed, killing some seventy men, and involving a monetary loss running up into the millions. Despite this set-back, the project was not abandoned. The Government itself took the matter in hand and appointed a commission of three members to reconstruct the bridge. The contract was let eventually to the St. Lawrence Bridge Co., a subsidiary of the Dominion Bridge Co., which was formed for the purpose.

The undertaking of the St. Lawrence Bridge Co. prospered up to the point, when it became necessary to put into operation the unique scheme of raising the central span, which has just been successfully concluded. This was first attempted in September, 1916. In the presence of an immense throng of spectators, the span was floated up the river and fastened to the lifting apparatus. The pontoons were removed and the cantilever arms were found to hold the immense weight of the suspended span securely. Lifting was commenced and the span was apparently safely on its upward journey when, without a moment's warning, one corner of the fastening gave way and the whole mass dropped into the river.

The Third Attempt.

Undeterred by this second and, in many respects, more disheartening accident, the St. Lawrence Bridge Company decided to try again. They devised special precautions, used better materials and made arrangements for more careful operation of the lifting apparatus. A complete new span was erected at Sillery and in due course this was floated up the river, linked to the suspended arm and raised to position. With the previous year's sensational denouement in mind, immense crowds of spectators again lined the river banks but any expectation that there might be a second collapse was doomed to disappointment, for throughout the four days that the lifting continued, nothing occurred outside of the prescribed programme.

Never before has a bridge span of the size and weight of that of the Quebec Bridge been raised in such a way before. There have been numerous instances where small spans have been moved to position on barges and raised by derricks, and there have also been cases where spans have been floated to position and lowered into place with the fall of the tide, but the Quebec span raising is unique in the annals of engineering.

The actual system of jacking up the bridge is interesting, even to a layman, for when the idea is once grasped it is seen that the system employed is quite simple. Roughly, the span is suspended from the outstretched arms of the cantilevers by lifting links, or long hanger chains, composed of eight sections, of varying length, each composed of four plates 28 inches wide by 1½ inches thick and connected by pins 12 inches in diameter. Five of these sections measured 24 feet between connecting pins; one was 29 feet long; one, 23 feet 9 inches, and one 9 feet 9 inches. At intervals of 6

feet, holes pierced these sections, these being employed during the raising operations for holding the jacking pins.

The jacking apparatus was suspended from the arms of the cantilevers, one at each corner. This consisted principally of two powerful girders, the lower one fixed, the upper one capable of motion upward and downward through an interval of 2 feet. Between the two girders and resting on the lower ones were placed the hydraulic jacks. The lifting links passed up through the girders and the weight of the span was carried by nickel steel pins passing through the girders and the holes in the links.

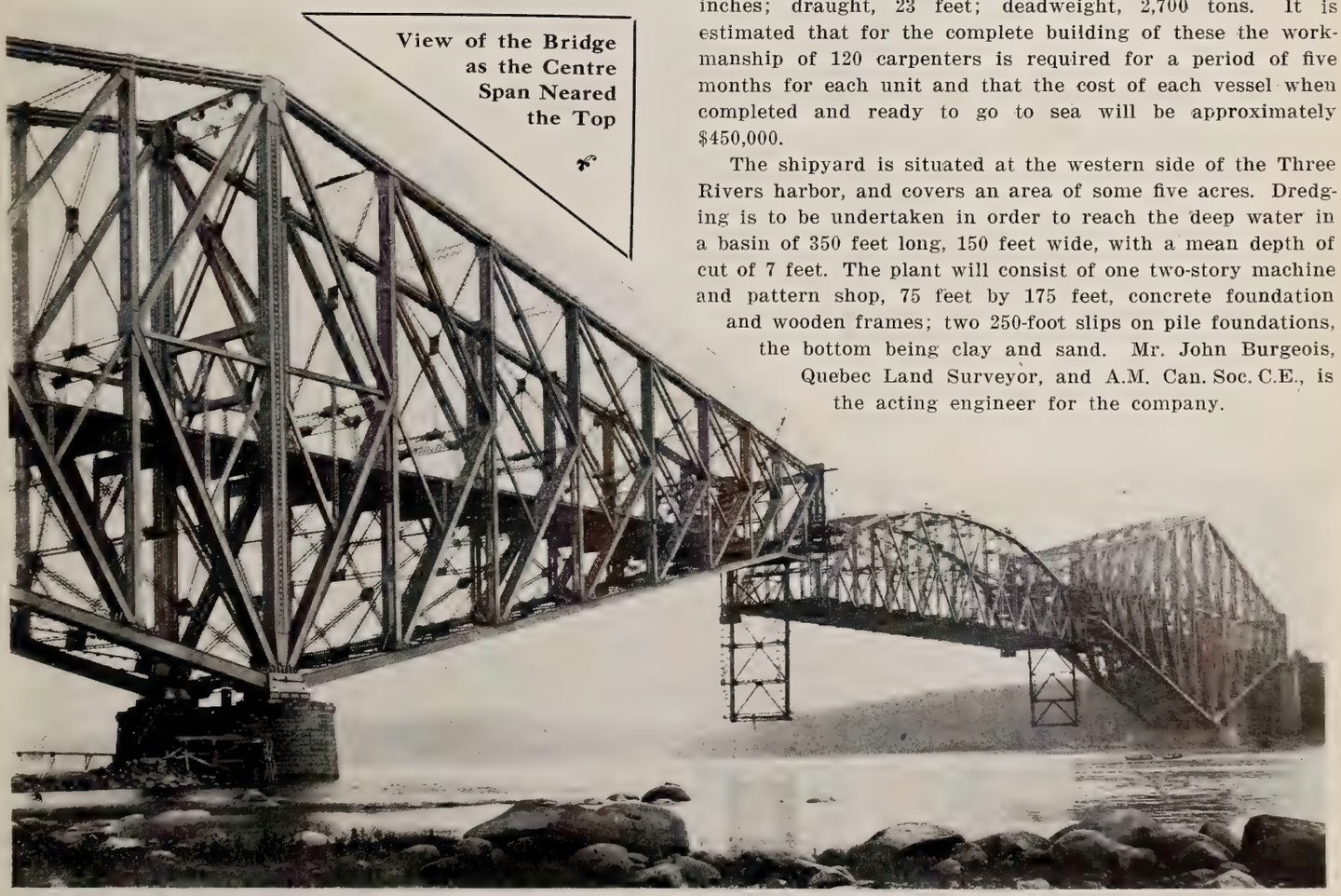
How the Lifting was Done.

To begin with, when a lift was contemplated, the span was held by the pins in the upper or movable jacking girder, while the pins were removed from the lower or stationary jacking girder. The power was then turned on and the jacks, resting on the lower girder, proceeded to do their work, slowly forcing the upper girder up through a distance of two feet. When this was accomplished the pins were inserted in the lower girder, in order to take up the weight of the span at that point. They were removed from the upper girder and the jacks being lowered to their primary position, the latter girder sank down again to its primary position. The same process was then repeated, each lift bringing the suspended span up two feet.

While it was not due to this cause but to a defective piece of material that the span fell last year, the fact that one end of the span had been lifted higher than the other on that occasion was not a desirable condition and this year precautions were taken to prevent any such happening. All operations at the four corners were carried on as nearly simultaneously as possible. There was telephonic communication between each corner and a careful scrutiny was exercised over every motion. More than that a system of safety screws was devised, their purpose being to follow up the jacks, so that should there be any failure in this quarter, the weight would be immediately taken up. These were operated by hand power.

Last year's collapse was due to the fracture of a shoe casting at one corner of the span. This casting carried the dead weight of the span and transferred it to the lower supporting girder, suspended from the cantilever arm. This year a system of nickel steel bearing keys was devised, which overcame many of the defects of the previous arrangement.

To give an idea of the immense size of the Quebec Bridge it may be explained that the suspended span is 640 feet in length, while the cantilever arms stretching out over the river are 580 feet long, giving a length from pier to pier of 1,800 feet. The suspended span is 110 feet high with a clearance of 150 feet at high tide. The bridge has an entire length from abutment to abutment of 3,238 feet.



View of the Bridge as the Centre Span Neared the Top

SHIPBUILDING AT THREE RIVERS.

Thos. Mulvey Kirkwood, Toronto, has been granted favors from the city of Three Rivers, Que., for the construction of wooden ships. Mr. Kirkwood has organized the Three Rivers Shipyard Company, Limited, whose bonds are financed by Le Credit Canadien, Limitée, of Montreal, and guaranteed by the city of Three Rivers, as per a by-law passed at a meeting held the 24th of August last.

The promoter has a contract for two sea-going vessels, length between perpendiculars, 250 feet; beam, 43 feet 6 inches; draught, 23 feet; deadweight, 2,700 tons. It is estimated that for the complete building of these the workmanship of 120 carpenters is required for a period of five months for each unit and that the cost of each vessel when completed and ready to go to sea will be approximately $450,000.

The shipyard is situated at the western side of the Three Rivers harbor, and covers an area of some five acres. Dredging is to be undertaken in order to reach the deep water in a basin of 350 feet long, 150 feet wide, with a mean depth of cut of 7 feet. The plant will consist of one two-story machine and pattern shop, 75 feet by 175 feet, concrete foundation and wooden frames; two 250-foot slips on pile foundations, the bottom being clay and sand. Mr. John Burgeois, Quebec Land Surveyor, and A.M. Can. Soc. C.E., is the acting engineer for the company.

ALCOHOL MADE FROM WASTE AND SAWDUST.

Ton of City Garbage Makes Nearly Five Gallons at Profit of $2.40.

Ethyl alcohol, or grain alcohol, as it is usually called in Canada, has, hitherto, been chiefly manufactured from molasses and corn in North America and from potatoes in Europe. The molasses has had to be imported from Cuba and Porto Rico, but, owing to the present high freight rates, it is more profitable to burn the molasses on the spot in order to recover the potash. A plant with a capacity of 100 gallons of alcohol per day would use the following: 200 gallons of molasses, or one ton of shelled corn, or 4 tons of potatoes, or 6 tons of wood waste.

The use of sawdust is very much cheaper than grain or molasses, and does not involve the consumption of valuable raw material.

In 1912, a North Carolina plant produced 310,000 imperial gallons of 95 per cent. alcohol from the equivalent of 35,000 cords of pine sawdust and waste and, since 1914, has increased its production.

The sawdust is "digested" with sulphuric acid, the soluble constituents are extracted with hot water, and, after neutralization with milk of lime and clarification, are pumped into fermenting vats. Yeast grown in wood liquor is added, and, after fermentation, the fermented liquor is distilled.

In three paper mills in Sweden, the utilization of the sulphite liquor produced about 1,250,000 gallons of alcohol per annum. Two plants have been established in the United States and produce 15 gallons of 95 per cent. alcohol per ton of sulphite pulp. It is estimated that a plant with a capacity of 2,500 to 3,000 gallons of alcohol per day, and operating under favorable conditions, could produce at a cost of 14 to 20 cents per gallon. A municipal plant at Columbus, Ohio (population 182,000), is manufacturing alcohol from city refuse. The grease extracted from the refuse is cooked with sulphuric acid and steam, the acid is neutralized, the liquor fermented with yeast and the alcohol is recovered by distillation.

One ton of Columbus "green garbage" yields 4.8 gallons of 95 per cent. alcohol, and it is estimated that a plant costing $36,000 would treat 20,000 tons of refuse annually and produce 80,000 imperial gallons of alcohol, giving a profit of 50 cents a gallon at war-time prices, or 37 cents under normal conditions. Thus, one year's refuse would yield as much alcohol as could be produced from 33,600 bushels of shelled corn, 39,500 bushels of wheat, or 110,350 bushels of potatoes.



A Detailed View of the Lifting Arrangements

WEST INDIAN TRADE.

Trinidad Firm of T. Geddes Grant Now Operating an Office in Halifax, N.S.

During the past summer the firm of T. Geddes Grant, Port-of-Spain, Trinidad, have opened a branch in Bedford Chambers, Halifax, with a view to the more expeditious handling of Canadian shipments to the British West Indies. Mr. Grant is well qualified for this work. He is a Canadian by birth but has lived nearly all his life in the West Indies, his father, Rev. Dr. Grant, being for many years in charge of the Canadian Presbyterian Mission to the West Indians in Trinidad. For a period of sixteen years Mr. Grant was associated with the London and Glasgow firm of C. Tennant, Sons & Co., in Trinidad, and then for the past seventeen years he has been in business on his own account.

As it appears to be the wish of both Canada and the British West Indies that trade should be increased between the two, and as this business is likely to continue and not be interfered with by hostile tariffs but rather bolstered by customs preference, Mr. Grant's venture is one that should receive encouragement.

"Owing to the proximity of Canada and the British West Indies and because of the fact that one is the exact opposite of the other in the nature of its products, there should be a very extensive trade between the two," says Mr. Grant. "Though the means of communication are not all that we might desire, nevertheless we have a regular fortnightly service between Canada and the West Indies, a service which is not afforded many other parts of the Empire under present war conditions."

Major Michael, who went overseas with the 79th Battalion and whose death in action was recently reported, represented the Sunset Manufacturing Co. of Winnipeg in the membership of the Association.

CHANGES IN THE DOMINION COMPANIES ACT

By F. W. WEGENAST

IN the closing hours of the Session of Parliament just concluded a bill was passed embodying a number of important amendments to the Dominion Companies Act, which will demand the careful attention of all companies operating under Federal charters. Amongst the new provisions are the following:

(*a*) *Annual Meeting.* The Act as it formerly stood did not require, although it contemplated, that a company should hold an annual meeting. The new Act expressly requires companies to hold an annual meeting, and in default of other provision in the by-laws the date of the annual meeting is fixed on the fourth Wednesday in January.

(*b*) *Annual Statements.* At the annual meeting the directors are required to lay before the company:

(1) a balance sheet made up to a date not more than four months before such annual meeting: Provided, however, that a company which carries on its undertaking out of Canada may, by resolution at a general meeting, extend this period to not more than six months;
(2) a general statement of income and expenditure for the financial period ending upon the date of such balance sheet;
(3) the report of the auditor or auditors;
(4) such further information respecting the company's financial position as the special Act, letters patent or by-laws of the company require.

Every balance sheet is to be drawn up so as to distinguish severally at least the following classes and assets and liabilities, namely:—

(1) cash;
(2) debts owing to the company from its customers;
(3) debts owing to the company from its directors, officers and shareholders respectively;
(4) stock in trade;
(5) expenditures made on account of future business;
(6) lands, buildings and plant;
(7) good-will, franchises, patents and copyrights, trademarks, leases, contracts and licenses;
(8) debts owing by the company secured by mortgage or other lien upon the property of the company;
(9) debts owing by the company but not secured;
(10) amount of common shares, subscribed for and allotted and the amount paid thereon, showing the amount thereof allotted for services rendered, for commissions or for assets acquired;
(11) amount of preferred shares subscribed for and allotted and the amount paid thereon, showing the amount thereof allotted for services rendered, for commissions or for assets acquired;
(12) indirect and contingent liabilities;
(13) amount written off on account of depreciation of plant, machinery, good-will and similar items.

(*c*) *Annual Reports.* Dominion companies are required for the first time to make annual reports to the Dominion Department in the same way as provincial companies to the Provincial Department. The requirements for these annual reports are similar to those of the Provincial Acts. The penalty for non-compliance is $20 per day for every day of default. If a company fails for three successive years to file its annual report its charter will lapse.

(*d*) *Auditors.* The amendments include provisions, taken from the Imperial Act, requiring a company, at its annual meeting, to appoint an auditor or auditors, and laying down the duties of such auditors. The principle is for the first time clearly laid down that the auditor is responsible to the shareholders rather than the directors.

(*e*) *Investigations.* The Secretary of State is authorized to direct an investigation into the affairs of any company on the application of shareholders holding an amount of stock warranting the investigation. The Secretary of State may, for the purposes of the investigation, appoint an inspector who has power for the purposes of the inspection to take evidence under oath, etc.

(*f*) *Inspectors.* The company may also itself, by resolution at any annual or special general meeting, appoint inspectors to investigate its affairs, and any inspectors so appointed have the same powers as those mentioned in the preceding paragraph.

(*g*) *Registration of Mortgages, etc.* The new Act requires that every mortgage or charge created after the first day of September, nineteen hundred and seventeen, by a company, and being either—

(1) a mortgage or charge for the purpose of securing any issue of debentures; or
(2) a mortgage or charge on uncalled share capital of the company; or
(3) a floating charge on the undertaking or property of the company;

shall, so far as any security on the company's property or undertaking is thereby conferred, be void against the liquidator and any creditor of the company, unless the prescribed particulars of the mortgage or charge, together with the instrument (if any) by which the mortgage or charge is created or evidenced, are delivered to or received by the Secretary of State of Canada, for registration in manner required by this Act, within twenty-one days after the date of its creation, but without prejudice to any contract or obligation for repayment of the money thereby secured; and when a mortgage or charge becomes void under this section the money secured thereby shall immediately become payable.

(*g*) *Prospectuses.* The new amendments embody provisions taken from the Imperial Act and similar to those in the Ontario Companies Act, requiring all prospectuses to contain certain information and to be filed with the Secretary of State.

(*h*) *Private Companies.* The distinction is introduced for the first time in the Dominion Act between a public company and a "private company." The latter is defined as follows: "Private company" means a company which by its letters patent or supplementary letters patent—

(1) restricts the right to transfer its shares; and
(2) limits the number of its members (exclusive of persons who are in the employment of the company and of persons who having been formerly in the employment of the company were, while in such employment and have continued after the termination of such employment to be members of the company) to fifty; and
(3) prohibits any invitation to the public to subscribe for any shares or debentures of the company.

A private company may, instead of filing a prospectus, file a notice in lieu of prospectus in the form prescribed by the Act.

The provisions with respect to the liability of directors for statements in the prospectus also follow the provisions of the Imperial Act.

(*i*) *Shares without par value.* A feature entirely new to Canadian company law is introduced by provisions authorizing the issue of shares without any "par" or nominal value. These provisions, which were adopted by the State of New York in 1912, were drafted by a celebrated New York lawyer as a device for preventing stock watering. The underlying idea is that the fixing of a par value for shares is unnecessary and illusory. Instead of dividing the stock of the company into so many shares of a fixed value it may be divided into a number of shares, each representing a fraction of the whole. Thus the

stock might be divided into five shares of 1/5 each or 100 shares of 1/100 each. These provisions are, of course, optional.

(*j*) *Corporations without purpose of gain.* Provision is made for the first time for the incorporation of associations for "national, patriotic, religious, philanthropic, artistic, sporting, or other objects" without resorting to private Act of Parliament as was formerly necessary.

(*k*) *Inter-insurance.* Provision is made for removing, both for companies incorporated under the general Act and for those incorporated by private Act of the Dominion, the doubts as to whether these companies could enter into contracts of insurance under the scheme known as "Reciprocal" or "Inter-insurance."

The above is only a brief sketch of some of the principal features of the amendments. The Act is already in force and companies will be well advised to provide themselves with a copy as soon as possible, and give careful attention to its provisions. The general penalty for non-compliance with the Act is "a penalty of not more than $1,000 or to imprisonment for not more than one year, or to both such penalty and imprisonment."

IMPORTANT NEW USE IS FOUND FOR COBALT.

Discovery of Great Interest to Canada Which Produces Nearly All Cobalt Used.

Widespread interest has been aroused by the announcement of the discovery of a tool steel stated to be equal in durability and hardness to high-speed steel, but of which tungsten, always difficult to obtain, is not a component. "Cobaltcrom," as the new steel is called, is made by adding cobalt to chromium-carbon steel. Thorough tests of the new alloy have been made in a large number of important works in England.

The world's supply of cobalt formerly came from Germany and New Caledonia, but, since the discovery of the rich silver-cobalt ores of Cobalt, Ontario, that province has produced almost the entire world's supply. The ores and concentrates of this district contain from 4 to 10 per cent. cobalt per ton.

During the early days of mining in this district much ore was exported to the United States and treated for its silver contents alone. During the past few years the smelting industry of Ontario has progressed at a rapid rate and can now recover as refined product all of the valuable mineral content of the ore, viz., silver, arsenic, nickel and cobalt. The latter is largely marketed as cobalt oxide, but it is also produced in the metallic form and in the form of salts.

The output of the cobalt products in Canada is largely controlled by the market demand, as the capacity for production is considerable. Cobalt was formerly used for its coloring properties, but in the past few years new uses have been found for it. It has advantages over nickel for electroplating, and is used to considerable advantage in the manufacture of high-speed tool steels. Stellite, an alloy of cobalt, chromium and tungsten, has proved to be superior to high-speed steel for many operations, and it is claimed that it will allow of increasing the rate of cutting on the lathe from 20 to 50 per cent. and requires less time for sharpening the tools thus increasing the efficiency of shop production.

The increasing importance and use of this metal, in the production of which Canada has a monopoly, again emphasizes the importance of our mineral resources to Canada and the Empire.—W. J. D.

The use of hydro-aeroplanes for detection of forest fires is being considered by certain governmental and private interests in Canada.

LAST CHANGE IN VALUATION FOR DUTY OF IMPORTED GOODS

By J. R. K. BRISTOL
Manager Tariff Department, C.M.A.

REFERRING to circulars No. 144 of July 17th and No. 147 of August 30th of the Canadian Manufacturers Association, relating to the Order-in-Council of July 4th, 1917, under which goods purchased within nine months of importation may be appraised at the fair value at time of purchase, plus 25 per cent.

On the 4th instant the Order-in-Council of July 4th, 1917, was amended by a further Order-in-Council, which provides that:

In respect of rolled iron or steel, galvanized or not, ordered by the importer on specification within nine months from the date of contract, and imported since the 4th July, 1917, within nine months from the time specified for exportation, duty may be accepted on the fair market value of the goods at the date of contract, with an addition to such value of not more than twenty-five per centum.

Under the foregoing amendment to the Order-in-Council of July 4th, 1917, it is quite possible that there are cases where goods contracted for within eighteen months of the date of importation may be allowed entry on the fair market value of the goods at the date of contract, with an addition to such value of not more than 25 per cent.

United States Prices on Steel, Coke and Metal.

Under the Customs Act any reduction in the fair market value of goods between the time of their purchase by the Canadian importer and their exportation to Canada may be allowed by the Customs in appraising the value for duty.

The prices proclaimed by the President of the United States on pig iron, coke, certain varieties of steel and on copper are lower than the prices at which many Canadian importers purchased these commodities prior to the President's proclamation. Any of these commodities, if purchased before the said values were fixed by the President of the United States, may be imported from that country and entered for duty on values corresponding to those fixed by the President of the United States, vide Subsection 5 of Section 43 of the Customs Act. In accordance with this provision in the Customs Act the Department of Customs, Ottawa, have instructed collectors of Customs as follows:

Iron Ore, Coke, Iron and Steel.

Iron ore, coke, pig iron and steel bars, shapes and plates purchased by the importer before September 25th, 1917, may, upon presentation to the Collector of Customs of the required documentary proof of purchase, as above, be appraised at the following values:

Commodity.	Basis.	Prire.
Iron ore	Lower Lake Ports	$5.05 per gross ton.
Coke	Connellsville	6.00 per net ton.
Pig iron		33.00 per gross ton.
Steel bars	Pittsburgh, Chicago	2.90 per cwt.
Steel shapes	Pittsburgh, Chicago	3.00 per cwt.
Steel plates	Pittsburgh, Chicago	3.25 per cwt.

Such commodities, purchased on and after September 25th, 1917, shall be dutiable at not less than the invoice value to the purchaser in Canada.

Copper.

Copper in ingots, blocks, or pigs, purchased by the importer before September 21st, 1917, may, upon presentation to the Collector of Customs of the required documentary proof of purchase, as above, be appraised at 23½c. per pound.

Such copper purchased on and after September 21st shall be dutiable at not less than the invoice value to the purchaser in Canada.

Catalogues and Booklets

ELECTRICAL SUPPLIES.

The new general supply catalogue just issued by the Northern Electric Company, Limited, is a compliment to the electrical business of Canada. The book, which is one of the largest electrical catalogues issued on the continent, contains no less than 1,485 pages and weighs 6½ pounds ready for mailing. It contains the most complete listing of up-to-date electrical specialties of every description, classified in twenty-two sections, each section commencing with a four-page colored insert printed on heavy coated paper.

Some idea of the material covered by this book may be had from the titles which have been assigned to the various sections as follows:

Section No.	Title.
1.	Telephone Section.
2.	Wires and Cables.
3.	Pole Line Hardware.
4.	Insulators.
5.	Tools and Construction Appliances.
6.	Insulating Material.
7.	Conduit and Conduit Fittings.
8.	Small Electric Light Wiring Devices.
9.	Fuses and Knife Switches.
10.	Lighting Fixtures and Accessories.
11.	Socket Devices, Electric Ranges and Fans.
12.	Light Sources and Applications.
13.	House Goods, Novelties and Flashlights.
14.	Batteries and Accessories.
15.	Switchboards and Panelboards.
16.	Protective and Power Control Devices.
17.	Indicating, Recording, Integrating and Testing Meters.
18.	Generators, Motors, Transformers and Motor Applications.
19.	Low Voltage Outfits.
20.	Railway Electrical Supplies.
21.	Automobile Electrical Devices and Accessories.
22.	Miscellaneous.

This catalogue contains many improvements and innovations over previous issues, but the big improvement in this issue is the method provided wherever practicable whereby prices f.o.b. Halifax, Montreal, Toronto, Winnipeg, Calgary and Vancouver can quickly and easily be obtained.

Electrical supply catalogues as heretofore issued, have given only the manufacturers' list prices and discounts, usually making it necessary for the purchaser to estimate his own freight (or freight and duty) where costs were required f.o.b. various destinations. In this catalogue the Northern Electric Company have taken care of these two very important elements entering into the cost of electrical supplies delivered to Canadian points. To accomplish this, they have used Montreal and Toronto as basing points, and the list prices found in the catalogue apply to goods sold f.o.b. Montreal or Toronto (except in cases so noted). For other points at which the company has warehouses, the approximate delivered prices can be obtained by adding to the list prices shown, the necessary percentage as explained in footnote on each page.

PICTURES OF FIGURES.

A remarkably interesting pamphlet has just been published by the LaSalle Extension University, of Chicago, on "Graphic Charts for the Business Man." It is the work of Stephen Gilman, C.P.A., vice-president of the Tanner-Gilman Company, public accountants.

'The entire subject is only in its infancy," says Mr. Gilman, "and it may reasonably be expected that the art will be developed very extensively within the next decade. Unquestionably, the enthusiasm of business men and accountants for these 'pictures of figures' is becoming greater every day."

Besides a clear account of the whole process of graph making, this booklet contains 56 examples of graphs, from the simplest forms to highly elaborate charts. They include records of manufacturing costs, production, business organization, flow of materials, salaries of employees, net profits, relation of stock market to business activity, salesmen's productivity, sales, responses to advertisements, geographical distribution of customers, collections, relation of assets to liabilities, shipments, cash balances, time studies, idle time, traffic, bank deposits, complaints, telephone service, and many other things. These charts are so selected as to illustrate all the principal varieties of graphs in use at the present time.

The pamphlet has been prepared for use in the Business Administration Course of the LaSalle Extension University.

CANADA'S FIRST MODEL TOWN IS MAPPED OUT.

Large Paper Company Acting Under Conservation Commission's Advice is Fathering the Scheme.

Canada's first model town will be built on the Upper Ottawa. A splendid site overlooking Lake Temiskaming has been laid out according to modern principles of town planning by the Commission of Conservation, through its Town-planning Adviser, Mr. Thomas Adams, who has acted as consulting engineer. Building operations will be started shortly by the Riordon Pulp and Paper Co., who are to erect a large sulphite mill and paper plant nearby and for the accommodation of whose employees the town is intended.

A contour map showing the levels of the site was first prepared and the streets were then laid out so as to secure easy grades, directness of route, and absence of sudden deflections. If the usual method of rectangular survey had been adopted, the most important streets would have had grades of from 10 to 18 per cent., but, under the plan, the maximum grades have been reduced to 3 and 5 per cent. in most cases, with a maximum of 8 for short lengths.

Before any buildings have been erected the line of each street has been blazed through the forest so as to fix the best street locations and to secure the best aspects for the dwellings. Areas are being set aside for open spaces, social centres, churches, schools, etc., in advance. The main approach to the town will be by a street, 80 feet wide, passing through a square on which the stores and public buildings will be erected.

It is proposed to make the town a model of its kind, as it is recognized by the promoters that healthy and agreeable housing and social conditions are of vital importance in securing efficiency of the workers, and that large employers of labor have a direct responsibility in providing proper living conditions for their workers.

NEW PROCESS FOR RECOVERY OF SULPHUR.

Canada's Supplies from Sicily Cut Off and those from States Restricted.

Many processes have been tried for the economic recovery of sulphur from smelting gases with greater or less success, but it is now reported that sulphur is to be produced by a new process from sulphur dioxide in smelter gases at from $12 to $13 per ton. The waste gases from Sudbury have been estimated to discharge into the air over 100 tons of sulphur per day. Canada possesses no known deposits of sulphur that are of economic importance, but there are large reserves of pyrites which contain a high percentage of it.

The development of new processes for its recovery is of special interest to Canadian manufacturers of sulphite pulp and newsprint, now that supplies from Sicily are cut off by the scarcity of ocean tonnage, whilst those from the United States are restricted by the recent imposition of an export license by the United States Government.—W.J.D.



Shipping Out Wool from the Storage Warehouse

HANDLING THE CANADIAN WOOL PROBLEM

By EDWARD W. REYNOLDS

MANY difficult problems have confronted the Canadian industrial world since the commencement of hostilities in August, 1914. Most of them have been subjected to adjustments as a war-time expedient; few have been permanently solved. Of those which have reached a solution, none stand out so prominently as the work of the Canadian Wool Commission, which has accomplished results that will have a lasting effect upon this important Canadian industry. Through the work of this body of Canadian textile men, who have worked regularly and efficiently to ward off a wool famine, many industries have been given new life, some have been the outcome of their efforts, while the war work of the Canadian army has been materially assisted.

There is yet another important lesson learned as a result of the work of the Canadian Wool Commission. It is this; that a committee of experts who can gather together with the co-operation of the machinery of the Canadian Manufacturers Association, can do more towards solving an industrial problem or problems than can the average committee of parliamentarians, or government officials.

The history of the Commission proves this contention.

At the outbreak of war, the British Government, after realizing that the war would be protracted, soon began to take stock of its resources throughout the world in general, and the Empire in particular. Embargoes were placed on this and that commodity. Sales were restricted. Even the export and import trade between the overseas Dominions was checked, and in many cases prohibited. London became the pivotal point of the British Empire to greater degree than heretofore. Countries the other side of the globe could not export to their neighbors without the permission of the authorities in London.

This new condition of affairs did not materially affect the industrial life of the Dominion for a few months. Production went on apace. There appeared to be no necessity for conserving the warehouse stocks, as it was understood that some of the embargoes had been placed on commodities as a simple means of facilitating stocktaking by the British authorities.

But the embargoes were not lifted. The success of the British blockade depended upon the restriction of shipments from the overseas Dominions to any part of the globe. It was discovered that the enemy could get minerals even from Britain by means of false entries on bills of lading, etc. Therefore, it is easy to see why Great Britain refrained from permitting the promiscuous shipment of wool from Australasia to any portion of the world. Wool is an important war material, and the coterie of belligerents, which possesses the greater quantity, stands an obviously better chance of winning out. In the meantime, Canadian textile industries were beginning to suffer. The wool supplies were dwindling fast. The grades developed in Canada did not suit the entire needs of Canadian mills. Even at that, the prices given for wool in the open and unrestricted market at Boston resulted in the shipment of practically the entire Canadian wool clip out of this country, and any effort to restrict its exportation would be fought by the western sheep ranchers, who are a powerful political influence in the West.

Under these circumstances, what was the Canadian textile industry to do? The experiences of the first winter of trench warfare had taught the Allies many hard lessons. If they were to successfully fight attrition, they must give their men greater comfort, or at least some semblance of comfort while on active service. The French and British authorities alike, made appeals to the Canadian mills to set aside their ordinary work and make army blankets and clothing for the armies during the coming winter of 1915 and 1916. The Canadian climate also demands that those at home shall be able to procure warm clothing. What were these Canadian manufacturers to do? Simply comply with the Government's requests and commence work. And this is where the Canadian Wool Commission became a prime necessity.

The British and French Governments, the War Purchasing Commission, and the Department of Trade and Commerce at Ottawa knew what was wanted, but did not offer any advice as to how the necessary raw material was to be obtained. On the other hand, the Canadian woollen and textile men knew where they could get their wool, and that it was obtainable, but they had not been in the habit of dealing direct with the men in the primary market. A vast majority of their purchases had been made through the big woollen firms in Bradford, England.

To bring the matter of getting more wool to replace the diminished stocks to a head, a party of Canadian mill men got together and formed the nucleus of the Canadian Wool Commission. They appealed to the Federal Government for official recognition, and the proper authority to act. This

Commission was to be responsible for the apportionment of any wool that might be shipped from Australia to Canada for domestic and war use. The Government gave the Commission this necessary authority and recognition, and thus the first and only Canadian quasi-Government Commission, which did not include a member of the Government of Parliament in its personnel, came into being, and its work has justified its existence; its war-time efforts, practically on behalf of the Canadian Government, has been declared a distinct success. The personnel of this Commission is Messrs. George Pattinson, Preston; L. Bonner, Paris; C. W. Bates, Carleton Place; James Rosamond, Almonte; George Forbes, Hespeler; F. B. Hayes, Toronto, honorary secretary.

After the inaugural meeting, representations were made to the Imperial authorities to permit the shipment of Australasian wool to Canada. This was granted the Commission, which had to guarantee that the wool would be properly apportioned; that none of the shipments would be used for other than Canadian domestic or war work, and that the shipments would be paid for on delivery. Under these conditions 16,000 bales of Australian, and 7,000 bales of New Zealand wool is now being shipped to Canada. Some of it has arrived, and some is in transit.

But getting the wool shipped from Australia did not complete the task of the Canadian Wool Commission. It had to open offices centrally located, and had to do the business of a selling agent. To facilitate this, the Canadian Manufacturers Association placed a portion of its big suite of offices in the Bank of Hamilton Building, Toronto, at the disposal of the Commission, and there the secretary was installed. The needs of the different mills had to be supplied, and the samples of the Australasian wool that came ahead of the shipments were forwarded to the Toronto offices, and there the prospective buyers came, inspected and bought. Financial arrangements had to be made, but the Canadian banks facilitated this by guaranteeing the purchases, and the demands of the Imperial authorities were met. The whole work was a large undertaking and speaks volumes for the capacity and the energy of the men in the performance of their task, which saved this all-necessary industry from approaching chaos.

The apparent inadequacy of Government departmental machinery to cope with a serious crisis was amply demonstrated by the conditions that confronted the woollen industries before the appointment of this Canadian Wool Commission. This is not criticism of the departments, or the officials, but of the machinery. The same applies to conditions in Britain. Had not the British Chancellor of the Exchequer, Mr. David Lloyd George, at that time called in a committee of financial experts at the outbreak of war, the financial structure of the wealthiest nation of the time would have toppled like a house of cards. The work of this committee has its replica in the work of the Canadian Wool Commission.



Experts Examining Contents of Bale

The above comment applies to most Government departments. The wholesale loss in the industrial world; the chaos that exists in international commercial relations, would have been minimized, or perhaps now have been non-existent, had all the departments of the Government called in committees of experts, representatives of the very trades affected, to advise and guide the Ministers, and in a practical manner help keep the wheels of progress moving. By proper management, and wise and careful discrimination in facilitating commerce, many an industry that was forced to close down for a year or more after war broke out, would have been kept working. Developments at Washington since war was declared have proved that. It is not yet too late to appoint such committees in Canada as a means of helping Canada to help the Allies win the war. Yet another important benefit accruing to Canadian industry as a result of the work of the Canadian Wool Commission is this. The encouragement of Canadian manufacturers to go direct to the primary markets for their needs, and eliminate the expense entailed in the handling of goods by middlemen before they get to the manufacturer. It can be safely stated that when hostilities cease, and there is no apparent reason for the continued existence of the Canadian Wool Commission, the Canadian buyers will not go back to their old plan of buying Australian wool in Britain, but in Australia. These Canadian buyers, through the lessons learned in their dealings with the Canadian Wool Commission, will know how to go direct to Australia, and make their selections, and much saving of time and money will result.



A Shipment of Australian Wool in Storage

CAUTION IN MAKING SHIPMENTS IN VENEZUELA

CONSUL EMIL SAUER, MARACAIBO, AUGUST 8TH.

In shipping goods to unknown individuals and firms in Venezuela it is essential to keep in mind the very important fact that in Venezuela possession of shipping documents does not give control over the merchandise covered by them. It has come to the notice of this consulate that disreputable individuals and firms here, unknown to American exporters, sometimes succeed in getting merchandise shipped to them from the United States to be paid for upon arrival, the exporters believing that their interests are sufficiently safeguarded by having the shipping documents sent with the draft to a local bank with instructions to collect payment of the draft before delivering the documents. The following extract from a letter received by a bank here from an American exporter illustrates a case in point:—

"We would appreciate very much if you could furnish us with some information as to the financial standing, integrity, responsibility, and ability of the following two firms in Maracaibo: . . . Both firms have given us important orders with the instructions to draw on your bank against shipping documents. We executed part of order and have one shipment on the road already."

Now, the bank manager informed this consulate personally that neither of the two firms is reputable, and that neither has a cent of credit with the bank. It is known to this consulate that there are several drafts at each of the two local banks, at least against one of the consignees referred to in the letter from the American firm, for merchandise which he received from the United States without paying for it, although it was intended that he should pay in each case before withdrawing the goods from the custom house, and it is quite clear that he never intends paying the drafts.

Shipping Documents Not Necessary to Clear Merchandise.

The possession of the shipping documents by the bank will give absolutely no control over the merchandise covered by them, for the reason that such documents are not required under Venezuelan law for the purpose of clearing the goods from the custom house. The only document required by the custom house is the Venezuelan consular invoice. These invoices are made out in quadruplicate, one copy being given to the foreign exporter, one copy sent direct to the Venezuelan custom house where the goods covered are to be entered, and one copy sent direct to the Ministry of Finance at Caracas. The copy delivered to the exporter constitutes part of the shipping documents to be turned over to the Venezuelan purchaser, as is understood here, upon payment of the price of the merchandise. The purchaser, however, does not need these documents to clear the goods. If he does not procure them, he can clear the goods on the copy of the invoice transmitted direct to the custom house and nobody else can clear the goods except the consignee or his duly appointed agent. The customs officials, moreover, do not concern themselves with the question whether the merchandise has been paid for or whether satisfactory arrangement for payment of same has been made.

Consigning Merchandise to a Bank.

The only way to give a bank control over merchandise shipped here to be paid for upon arrival, is to consign the same to the bank, giving the bank instructions to turn the merchandise over to the purchaser upon payment of the draft covering cost of the goods. It is, however, not to be taken for granted that dishonest purchasers will take merchandise under such conditions, and it is not certain that merchandise shipped under such circumstances and remaining unclaimed can be disposed of with advantage to the seller.

Payment Before Shipment of Merchandise.

The safest plan to follow, in selling to persons or firms not known or known to the persons or firms to whom no credit can be given, is to require the intended purchaser to provide through a local bank the necessary credit with an American bank, with instructions that the American bank pay the amount of the order against shipping documents in New York. Even in such cases it has come to the notice of this consulate that prospective buyers sometimes suddenly withdraw their credit, after the sellers have incurred expenses in getting the orders ready, but before they have had time to present to the bank their documents for payment of the drafts.

Nothing said above is to be understood to imply anything to the prejudice of reputable commercial houses here, of which there are a large number, to which open credit can be extended and in fact is extended by a number of American exporters. But American exporters desiring to form new connections here should first inform themselves through American banks or reporting agencies or through banks in this city regarding the financial standing and reputation of individuals and firms from which they receive orders and which they do not know. The local banks are quite willing to furnish such information and to give hints where caution is to be exercised.—"*Commerce Reports*," *Washington*, August 31st, 1917.

AN ODD TURN OF AFFAIRS.

ELLWOOD HENDRICK.

The United States Bureau of Mines has lately issued a statement in regard to a Portland cement plant at Riverside, California, which shows how an apparatus, installed to avoid nuisance and save the health of the workers, has become the central feature of the whole establishment.

One of the great troubles of a Portland cement mill is the dust. It is likely to disturb vegetation by settling down on growing things, and it is unwholesome for the men employed in the mill. The factory in question was in trouble on this account, and it availed itself of Prof. Cottrell's invention to precipitate the particles on their way to the stack by means of electric currents. Now this dust contains potash, and so efficient is the installation that 90 per cent. of the content of this precious product is recovered in the form of potash salts. The present demand for potash in this country is something like Coal Oil Johnny's thirst, which, according to the legend, was unquenchable. As is well known, we formerly obtained our entire supply from Germany, and these salts which they produce in California bring as high as $400 to $450 a ton, and even then are hard to find.

The Riverside concern finds that its potash salt output pays its entire operating costs plus a reasonable profit, leaving the cement, which it will soon be producing at a rate of 5,000 barrels per day, as clear profit—"velvet," in the vernacular. It has no immediate market for so much cement, but what is not sold is kept as clinker in dry storage. The covering costs are slight, and there are worse things to own as an investment than large quantities of Portland cement, especially if it does not cost anything.

SPONTANEOUS COMBUSTION*

By G. H. P. WALKER

Electro-Chemist, Canadian Salt Co., Limited, Windsor

THE subject of spontaneous combustion is essentially a chemical subject and involves considerable data of a technical nature, but the writer has endeavored to avoid chemistry as much as possible in order that the paper might possess a more or less practical value.

The phenomenon of combustion has been known since the earliest times, although the artificial production of fire is of comparatively recent date. Fires caused by lightning, volcanic eruptions and the spontaneous combustion of substances in nature were probably the first to be recognized by mankind, and it is no doubt from one or other of these natural sources that man first obtained fire. It is a well-known fact that among the ancients fire was always kept smouldering, and when a tribe travelled from place to place the fire was carefully carried along. This custom is still practised by certain Australian races.

Fire was first produced artificially in the South Sea Islands by an ingenious native who obtained the necessary ignition temperature by rubbing two pieces of wood together. This marked a most important event in the history of the human race and placed at man's disposal a most powerful agent. It is not strange that many attributed it to a divine source, and hence arose the fire worshippers, who still survive among Eastern nations. Plutarch states that as late as 100 A.D. there were races in existence who had no knowledge of fire.

The next step in the artificial production of fire was by means of the flint, and a little later, when scientists began to study this phenomenon, our modern match was developed, the ignition of which was originally accomplished by dipping the end (on which a little chlorate of potash and sulphur were cemented) into a vessel of sulphuric acid.

Electric Current and Fire.

Another very simple source of fire is seen in the ordinary magnifying glass which condenses the sun's rays, producing quite a high temperature. The electric current also may be used to produce fire. In fact, the electric arc is capable of producing the highest temperature yet obtained through scientific research.

Apparently little was known about spontaneous combustion in early times, and even to-day it is but slightly understood; yet there can be no doubt that many conflagrations whose origins still lack satisfactory explanation might rightly be attributed to this cause.

When we speak of spontaneous combustion we usually refer to that peculiar form wherein ignition takes place without evidence of the employment of any external agent. For example: there is a striking difference between the spontaneous bursting into flames of a pile of coal and the ignition of the same coal under a boiler. It is the former type of combustion which we wish to consider in this paper. When ignition has taken place combustion follows the same laws whether of spontaneous or other origin, and these laws always represent more or less complex chemical actions. Almost all chemical actions are attended with the liberation of considerable heat, and the quantity of heat set free is constant whether the action be relatively slow, as in the decaying of a piece of wood, or whether it be rapid, as in the combustion of a similar piece of wood in a furnace, the products of combustion being identical in either case. Combustion, as we usually understand it, is the union of a substance with oxygen, but in chemistry we have numerous instances of combustion where oxygen is not involved at all. The velocity of combustion increases with marvellous rapidity with rise of temperature, a rise of 200° F. increasing the velocity one thousandfold.

*Paper at Convention of Dominion Association of Fire Chiefs.

Common Forms of Combustion.

But since this paper has to deal not so much with the results as with the causes of fires, we will turn now to a consideration of a few of the more common forms in which spontaneous combustion manifests itself.

Of these, perhaps one of the commonest is the spontaneous ignition of a piece of cotton waste or an old rag, saturated with oil and left lying in a warm place. Only certain oils possess the property of spontaneously igniting, and of those the most dangerous is linseed oil, the boiled variety being much worse than the raw, due to slight changes in its chemical structure which have been effected by the boiling, and due also to the presence of certain metallic salts (such as lead acetate, litharge and manganese dioxide), which tend to accelerate the process of "drying" by acting as oxygen carriers. Other oils which are subject to spontaneous ignition are hempseed oil, poppyseed oil, nut oil, and, in fact, any rapidly drying vegetable oil, the action of so-called "drying" being the cause of the ignition. Mineral oils are not generally considered to be dangerous in this respect, and sometimes a mineral oil is added to one of the above rapidly drying oils to lessen the danger of spontaneous ignition if left exposed to the air absorbed in a cloth or anything of a spongy structure which furnishes a relatively large area of exposed surface. When spontaneous combustion results from an oil-soaked rag (or an oil mop, for instance) having been left carelessly in a warm room or in the sun, it is caused by the rapid oxidation of the oil spread out over the large surface afforded by the folds of the cloth—the greater the exposed surface the more rapid the oxidation—and as the oil continues to combine with more and more oxygen from the air the temperature gradually rises until sufficient heat has been developed to cause the mass to burst into flames. An excellent example of this rapid oxidation may be seen in linoleum works where linseed oil is made to drip over the surfaces of vertically suspended sheets of specially prepared cheesecloth. In so doing the oil becomes oxidized by contact with the air and gradually builds up a tough rubbery mass on both sides of the cheesecloth. This substance is called linoxyn, and is used as a binder in the manufacture of linoleum. It is also ground with cork dust to produce cork carpet. The oxidation of the oil is regulated so as to prevent the action becoming sufficiently rapid to cause spontaneous combustion.

Oxidation of Oil.

The reason why a can of linseed oil does not burst into flames when left uncovered is that the small surface exposed to the air cannot develop heat with sufficient rapidity to raise the whole body of oil in the can to the temperature of ignition. Oxidation, however, does take place, as may be seen on the surface of the oil after having stood exposed for some time. This action of drying renders these oils very valuable as paint oils, but it also introduces a grave danger of fires being produced due to the spontaneous combustion of the oils.

It is interesting to note that paint oils do not dry in the sense that water or gasoline will evaporate or dry up, but their drying consists in the oils absorbing oxygen from the air, as above mentioned, to produce a substance of a solid nature in place of the liquid oil. Thus they gain in weight on drying, while water and gasoline lose in weight, and, in fact, finally disappear altogether.

Precautions in Paint Plants.

Great care should be exercised in paint and oil works where such oils are liable to leak out and come in contact with old rags, waste or other absorbent material. Numerous instances might be cited of fires having started in new houses just after the floors had been oiled—the origin in each case having proved to be the mop or cloth which had been used to apply the oil.

The dangers resulting from spontaneous combustion of oils are to be found in many industries where drying oils are employed. In tanneries the oils used for dressing the leather frequently oxidize with sufficient rapidity to take fire. In fact, freshly oiled leather is liable to ignite if left in a warm place, as near a steam pipe or heater. Here we have practically the same reaction as with the linseed oil on the mop. Another instance worthy of note is in cloth mills where oil is added to the wool before spinning, and particularly in the preparation of shoddy. If such oil-treated goods are piled where ventilation is poor, the oxidation of the oils may raise the temperature sufficiently to cause the pile to ignite.

In the charring of certain kinds of wood in the preparation of charcoal there is considerable danger of spontaneous combustion. It is a well-known fact that charcoal, being of an exceedingly porous nature, has an enormous capacity for absorbing certain gases. Good charcoal made from boxwood will absorb ninety to one hundred and seventy times its own volume of ammonia, sixty-eight times its volume of carbon dioxide, and eight to eighteen times its volume of oxygen. Freshly made dogwood charcoal absorbs oxygen so fast that it often bursts into flames spontaneously. For this reason, after charring, it has to be set away for a couple of weeks to permit it to slowly absorb moisture and air before being ground to be used in the manufacture of the higher grades of gunpowder.

The slaking of lime is a process well known to everyone, and yet few realize that here also lies a danger of spontaneous combustion. When water is added to quick lime it chemically unites with the lime with the evolution of large quantities of heat. If the action takes place in an enclosed space (a boxcar, for instance, or a bin), where the heat cannot dissipate readily, a temperature as high as 750° F. may be produced, thereby causing any wood or other readily combustible material close at hand to ignite. Few people realize that lime shipped in a car with a leaky roof may cause the car to burst into flames if the lime be very pure or "fat," as it is frequently expressed. Farmers have been known to have their wagon-boxes charred when driving home in a shower of rain with a load of lime. Many of us have not actually experienced such phenomena, but there can be no doubt as to the authenticity of these facts.

Purification of Coal Gas.

In the purification of coal gas by means of hydrated ferric oxide (a special oxide of iron) the ferric oxide removes certain sulphurous impurities (such as sulphuretted hydrogen) and gradually changes over to iron sulphide. This iron sulphide is then exposed to the atmosphere, where it oxidizes, liberating sulphur and changing back to ferric oxide. During this chemical action considerable heat is generated, and if the action is permitted to go on too rapidly, the mass may ignite spontaneously. Here again we have an excellent example of spontaneous combustion caused by simple exposure of the substance to the atmosphere.

In industries where steam power is extensively developed, considerable difficulty is sometimes experienced in the storage of bituminous or soft coal. Certain varieties of soft coals are much given to spontaneously igniting when stored in large quantities. The usual cause of such ignition is the presence of iron sulphide in the coal. Some coals contain as high as two to five per cent. of this impurity, which may occur in either of two forms, namely—pyrite, being a yellow variety, exceedingly hard and not a particularly dangerous impurity; and marcasite, a white sulphide which is much more prone to oxidation, especially in a damp atmosphere. When soft coal containing sulphide impurities is stored in large quantities and more or less exposed to dampness, the iron sulphide slowly oxidizes, yielding iron sulphate and sulphuric acid with the liberation of considerable heat. If this heat be not carried away by suitable ventilation, a high temperature is created and ignition of the coal results. Such fires are very difficult to extinguish and necessitate the moving of a large portion of the coal, at the same time thoroughly quenching it with a hose. Not only is sulphur (present in the sulphides of iron) objectionable from the standpoint of spontaneous combustion, but it also renders coal very undesirable for domestic purposes, the sulphur being given off as an oxide, or burning, and eventually producing sulphuric acid, which is injurious to articles of the household, especially leather, and to surrounding plant life. It also causes corrosion of the grate bars and furnace fittings.

Presence of Pyrites.

Some cases of spontaneous combustion in coal have occurred which could not be attributed to the presence of pyrites. In these instances the cause has usually been assigned to the power which some coals possess of absorbing and condensing in their pores the gases of the atmosphere, thus producing heat and ignition, as already mentioned in the case of freshly ignited charcoal. Then, too, any organic matter other than the coal itself which may be present seems to suffer oxidation, particularly when warmed in contact with air, and this also augments the tendency to spontaneously ignite. It is worthy to note that while moisture favors the oxidation of iron sulphides in coal, it retards the action of coal in absorbing oxygen, so that it is necessary to know the chemical properties of the coal in order to determine the cause of the spontaneous ignition. In either case the danger is lessened by good ventilation whereby the heat may be removed before the temperature of ignition is reached. On the other hand, no ventilation is preferable to a limited access of air which often favors spontaneous combustion.

Acetylene, which is the gas given off when calcium carbide comes in contact with water, is in some respects subject to spontaneous combustion. The pure gas is not dangerous, but commercial carbide usually contains impurities which give rise to the production of other gases besides acetylene. Of these, the most dangerous are phosphuretted hydrogen and siliciuretted hydrogen, the one a phosphurous compound and the other a compound of silicon and hydrogen. Both gases are poisonous and both are liable to burst into flame on coming into contact with air. This fact may account for some of the explosions in acetylene generators, even in the absence of a jet or any external means of igniting the gas. The white haze which is often seen in rooms lighted by acetylene is attributed to the formation of phosphorous pentoxide—a white powder which is formed on burning phosphuretted hydrogen and which settles very slowly. Pure acetylene has a pleasant

ethereal smell, the impurities producing the unpleasant odor with which most of us are familiar.

Mixtures of acetylene and air are much more readily ignited than are mixtures of coal gas or water gas and air. A glowing cigar is sufficient to ignite acetylene air mixtures. This gas is not particularly dangerous if handled at atmospheric pressure, but when compressed or liquefied it is more dangerous, and a sudden jar or a detonation near by is often sufficient to cause it to explode. In the storage of calcium carbide great care must be observed to prevent contact with moisture or damp air which will liberate acetylene. If the liberated gas cannot escape readily high pressures may result and finally serious explosions. About one-tenth as much acetylene as coal gas is sufficient to form an explosive mixture with air, and the explosive range of such a mixture is very wide, ranging from three per cent. to eighty-two per cent. acetylene.

Precautions in Chemical Warehouses.

In warehouses where chemicals are stored certain precautions should be observed in order to prevent accidental contact of chemicals which spontaneously ignite when mixed. For instance, potassium or sodium chlorate should not be stored where there is any possibility of sulphuric acid leaking out and coming in contact with them, for sulphuric acid has a great affinity for chlorates, giving rise to considerable heat—in many cases sufficient to ignite wood. A fire occurred some time ago from this cause—the sulphuric acid was stored in carboys on a loft under which were piled several sacks of chlorate. Some of the carboys became cracked and the acid, running down over the chlorate, set fire to the warehouse, resulting in considerable loss of chemicals. Concentrated nitric acid, if brought into contact with dry organic matter, produces rapid oxidation, and may raise the temperature of the mass to the ignition point. Dry straw, sawdust, and packing materials in general are particularly subject to ignition on contact with nitric acid, and great care should be taken in packing this acid to prevent spilling. When we recall that nitric acid is an important constituent of picric acid, nitrobenzol, gun-cotton, nitroglycerine, dynamite and numerous other high explosives, we begin to realize that it is a dangerous chemical with which we are dealing. The chlorates resemble nitric acid and nitrates somewhat, but are more susceptible to friction. Potassium chlorate may be ignited by stepping on some of the powder mixed with dust or other finely divided combustible. Sodium and barium peroxides may effect ignition in the same manner.

The Textile Industry.

In texile works where the processes of mercerizing and weighting of fabrics are carried on, certain heavily weighted silks, when very dry and closely packed, are subject to spontaneous combustion. The cause of this is not thoroughly understood, but when we reflect that weighting is often done by the addition of such substances as tannic acid and tannates, together with iron salts, which are very susceptible to oxidation, and consequent heating, we can at least approach an explanation of this phenomenon in that the iron salts and tannates take up oxygen from the air with such rapidity that sufficient heat is generated to ignite the fabric. Black silks are more readily ignited than colored silks, due to their larger content of oxidizable coloring matter. An unweighted silk is not dangerous in this respect.

In the dyeing of fabrics where potassium chlorate is used as the oxidizing agent there is considerable danger of fire, due to the rapid oxidation of the aniline dye of the chlorate. We have already seen that chlorate in the presence of a strong acid is very liable to produce fire, not only by the heat evolved during the action, but also by the liberation of chlorine peroxide, which is a highly explosive gas and a powerful oxidizing agent.

Bacteria or micro-organisms are sometimes responsible for fires, the heat being produced by fermentation or putrefaction. Although the temperatures produced by such actions are not high, yet if the heat cannot escape a gradual rise in temperature results, which in turn accelerates the fermentative action and may cause the ignition point to be reached. An excellent example of such heating is afforded in heaps of stable manure or in tanner's refuse. Here the heat cannot escape and the centre of the mass may reach a relatively high temperature. Any form of decaying organic matter may give rise to a similar effect in the absence of ventilation. Such heat, of course, could never be obtained if the mass were loosely piled so that air could freely circulate. On a larger scale this heating action is frequently observed in hay stacks when the hay has been put away green or imperfectly dried. The micro-organisms so plentiful in grass and hay act upon the fibres of the hay, producing oxidation and consequent heating (the initial heat developed by the organisms is not high, for most bacteria are destroyed below 212° F.) Here again a free access of air would prevent undue heating by allowing the heat to escape as fast as it is generated; or if the hay were pressed into bales and the air thoroughly squeezed out from the interstices, heating would be prevented. It is the presence of a *limited amount* of air that causes the heating. On the other hand, it is not always desirable to entirely prevent fermentation, for by this means the aroma, flavor and color of the hay are improved. The addition of salt is frequently the only precaution a farmer takes when storing away his winter supply of hay. The salt retards the action of the bacteria and renders the hay more palatable.

Electric Sparks from Friction.

Electric sparks caused by friction may ignite volatile solvents such as ether, naphtha or benzine, as in dry-cleaning establishments. Fires have actually been known to originate from the friction of rubbing benzine-soaked goods in a cleaning works, although such occurrences are rare. Some years ago a forty-gallon tank of naphtha became ignited in a cleaning works in France. One of the men threw a bottle of liquid ammonia into the tank and the result was marvellous, the fire being almost instantly smothered by the ammonia fumes. In this case water would have been of little use.

Another similar fire occurred in a ladies' hair-dressing parlor, where petroleum spirits were being used. The eminent scientist, Lord Kelvin, attributed this fire to the ignition of the spirit vapors by an electric spark from the brushing of the hair—no other source of fire being present.

Finely divided particles of any combustible substance suspended in the air are subject to rapid combustion if ignited from an open flame, a hot bearing, or other cause, as in flour mills, cork grinding works or coal mines, where fire damp is not always responsible for the disastrous explosions which occur from time to time. Such fires might often be prevented or rendered less violent by keeping the atmosphere damp in order that the dust might tend to settle. In some works solutions of calcium chloride (a by-product from the ammonia-soda process) are sprayed on the floors. The calcium chloride, being of a deliquescent nature, absorbs moisture from the air and tends to keep the floor damp, thus causing dust particles to adhere and settle more readily. This solution is sometimes used on the streets to keep down dust.

Combustibles of vegetable origin are much more prone to ignition than those of animal origin, since they all contain

cellulose in one form or another. Chemically speaking, cotton, linen and flax are almost identical with wood, all being made up largely of cellulose. Frequently it is desirable to render such substances fireproof where woven into fabrics. It is not practicable to make them thoroughly fireproof for a continued exposure to intense heat unless the materials consist of asbestos, but by treating them with solutions of certain salts, as for instance, alum, ammonia sulphate or phosphate, borax, water glass (being a soluble silicate of sodium), calcium chloride or sodium tungstate, and allowing those salts to crystallize in the pores of the fabrics, temporary fireproofing may be accomplished. The effect is simply to produce on the fabrics a coating which can resist a short application of intense heat without igniting, or which will liberate volumes of gases (ammonia or steam) incapable of supporting combustion. These gases produce a smothering effect on the flames in proximity to the fabrics and prevent their taking fire.

A mixture of three parts borax, two and one-half parts epsom salts and twenty parts water makes an excellent fireproofing solution, but must be applied as soon as prepared, the borax and epsom salts being first dissolved in separate portions of water. Most of the above mentioned salts may also be employed in the fireproofing of wood.

How to Quench Fires.

To quench a fire, one of two things is necessary. Either the temperature of the burning substance must be reduced below the ignition point, or the air or gas which support the combustion must be excluded. In practice both methods are employed, the former by a liberal application of cold water and the latter by the use of sand, textile fabrics (a coat or a quilt is often used in checking domestic fires), saline solutions or chemicals.

Of the saline solutions, probably the most used is a solution of sodium bicarbonate (baking soda) in water, to which sulphuric acid may be added by inverting the glass jar within the container. The acid reacts with the bicarbonate to liberate carbon dioxide—an inert gas which will not support combustion—and this gas dissolves in the water and is forced out through the nozzle into the fire, where it has a slight smothering effect, while the water acts in the usual way. Chemical fire engines operate on this principle.

One form of chemical apparatus is the small, one-quart extinguisher, which contains a heavy volatile non-combustible liquid called carbon tetrachloride. This liquid is applied by forcing it through a nozzle by means of a piston, and is unsurpassed for quenching burning gasoline, naphtha or benzine. The vapors of carbon tetrachloride, being inert, smother the flames where water would be of little or no avail. Extinguishing powders, consisting of a mixture of saltpetre, sulphur, charcoal and resins or similar substances, act by giving off dense fumes, which fill the area surrounding the fire and prevent access of air. Obviously such powders may be utilized effectively only within an enclosed space.

A Summarization.

Summarizing, we might say that some of the most fruitful sources of spontaneous combustion are to be found in the oxidation of certain rapidly drying oils where spread out on waste, rags, etc.; the oxidation of iron pyrites in soft coal; the slow oxidation of heaps of organic matter, as manure and hay; the absorption of gases by porous bodies, such as charcoal and powdered slack coal. In the above cases thorough ventilation or else none at all is to be recommended, a moderate or sparing admission of air tending to accelerate rather than to retard the action. As an example, we might mention the case of four ships carrying coal containing pyrites impurities to India some years ago. Of these, three were moderately ventilated by air shafts, and the fourth had no provision for ventilation. The ventilated ships were destroyed, due to spontaneous combustion of the coal, whereas the unventilated ship reached its destination in safety. If the coal is not thoroughly ventilated it should be packed as tightly as possible to prevent shifting about and grinding on board ship, for the finer the coal the more liable it is to heat and ignite.

As other sources of spontaneous combustion already referred to may be cited,—the slaking of lime, which is purely a chemical action and which gives rise to considerable development of heat; the action of nitric acid and other strong acids on organic matter (such as straw and shavings), the interaction of sulphuric acid and chlorates, the action of water on calcium carbide, sodium peroxide, and sulphuric acid, and the electric spark.

MUNITION FACTORY FIRES.

Ontario's Fire Marshal Reports on Dangerous Conditions that Have Lately Prevailed.

Investigations into the cause of recent fires that have destroyed several of the large ammunition factories in the Province have resulted in the adoption of important preventive measures.

Lack of proper supervision over the unskilled alien workmen who were employed in some of the most important, and certainly the most hazardous (as regards fire) operations of shell making; together with gross carelessness, appears, from the evidence adduced, to have been the cause of this enormous fire waste.

Foreigners, some of whom could not understand English, were employed in washing shells in gasoline.

As a result of competition in the labor market, smoking has been permitted in ammunition factories at night. In the case of the Cluff Ammunition Co.'s fire in Toronto, the evidence showed that a foreigner who was washing shells in gasoline dropped a match on the bench where the shells were drained, and the fire spread throughout the plant very quickly. The man who dropped the match tried to put the fire out with his hands and as a result was severely burnt. His clothing, saturated more or less with gasoline and oil, also caught fire and he ran through the building a veritable flaming torch.

The buildings that were completely gutted had a frontage of about 200 feet by a depth of 170 feet. The fire was fanned by a strong north wind, and although the fire department had sixteen lines of hose playing on the conflagration, they were unable to more than prevent the fire spreading to the surrounding property.

The Imperial Munitions Board recently prohibited the use of gasoline, etc., for washing shells.

If the management of the various ammunition factories exercised more care and forethought with regard to fire prevention, as well as a more strict supervision, especially over foreigners, a great many fires would be prevented.

The investigation in connection with the fire at the plant of the Copp Stove Company, Limited, Fort William, ammunition manufacturers, disclosed conditions of a somewhat similar character to those already outlined.

TRANSPORTATION

By J. E. WALSH

HIGHER RATES.

Iron and Steel Rates for Export Again Advanced by the Canadian Railways.

On August 8th the Canadian Railways advanced the rates applicable to various iron and steel articles applying from the principal iron and steel manufacturing centres in Canada to the various Atlantic ports, Baltimore and north, to Halifax for export, by amounts ranging from 2.5c. to 3.8c. per 100 lbs.

Upon investigation of conditions surrounding this advance it has been found that it was made in order to maintain existing relations between these rates and those applicable from points in the United States, Chicago and east, to the various Atlantic ports for export. In fact, the American lines advanced their rates from Buffalo and Pittsburgh 2.6c. per 100 lbs. and from Chicago 4.3c. per 100 lbs., effective August 20th, 1917, this advance being allowed by the Interstate Commerce Commission by their decision in connection with the so-called 15% case. The rates from Canadian points are made a percentage of the rate from Chicago to New York, this system being provided for by an order of the Board of Railway Commissioners for Canada, dated July 25th, 1905, as amended by an order dated September 4th, 1905. Under this system the rates from Hamilton, Brantford and Welland take 70% of the Chicago-New York rate and the rates from Toronto, Guelph and Milton 73%.

The G.T.R. and C.P.R. Tariffs naming these advanced rates are as follows:—

G.T.R.—Supplement 1, E- 94, CRC E-3622
" 2, E- 95, CRC E-3623
" 1, E- 96, CRC E-3624
" 1, E- 97, CRC E-3625
E-102, CRC E-3652

C.P.R.—E-3021, CRC E-3344

AN ERROR.

New Class and Commodity Tariffs Between Points in Eastern and Western Canada, All Rail, Not Postponed.

On September 20th a notice appeared in the press to the effect that the new tariffs issued by Mr. G. C. Ransom, Chairman of the Canadian Freight Association, Nos. 4 and 5, naming advanced rates, all rail, between points in Eastern Canada and points in Western Canada, would be postponed.

This information was erroneously sent out, and the Board has since advised that no order will be issued. It is the intention, however, to hold hearings at various points in the West, the itinerary being as follows:—

Calgary	October 15th
Edmonton	October 16th
Saskatoon	October 17th
Regina	October 18th
Winnipeg	October 19th
Fort William	October 20th

At these hearings the Board proposes to receive any objections in connection with the advanced rates named in the above-mentioned tariffs, after which the Board will decide whether or not the advances will be allowed.

In the meantime, as these new tariffs are in effect, all members will have to pay the advanced rates.

Interested members will remember that information was published in the August number of INDUSTRIAL CANADA, page 618 (g), explaining the advances proposed by the foregoing tariffs.

HANDLING EXPRESS.

Useful Advice Given Regarding the Packing and Marking of Express Shipments.

The National Industrial Traffic League of the United States, composed of traffic managers of commercial organizations and industrial concerns, is constantly studying transportation questions from every standpoint. Whilst it is an organization primarily to look after the shippers' interests, it does not hesitate to suggest to its members where improvements can be made by them of mutual advantage to shippers and carriers. At the semi-annual meeting held in Buffalo in August last, the Express Committee brought in the following report on the question of packing and marking shipments by express:—

Packing.

Express service is expedited service, and shipments should be so packed as to withstand reasonably quick handling. The question of packing is one that receives periodical attention by commercial organizations, but unfortunately little attention seems to be paid to this matter by many shippers. Your committee is of the opinion that members' attention should be called to this subject, and that they be urged to use ordinary precautions to prevent damage to shipments by express. Fragile shipments should be packed in boxes sufficiently strong to protect them; old marks should be carefully eradicated, as the Commission has held the marks on the package, and not those shown in the shipping receipt, govern on shipments by express; heavy packages of merchandise wrapped in paper and sufficiently strong cord.

If the shipper's name is shown on the outside of the package preceded by the word "From," it will result in his being notified promptly in the event of failure of the consignee to accept the shipment, or in case of the shipment going astray because of improper marking. The express rules specifically provide for notice being given to the shipper of refused or undelivered shipments forwarded by express; but this cannot be done, and the express company is not required to do it, unless the name of the shipper appears on the package. Tags should be avoided if the package can be safely marked. Where tags are required to be used (on castings and similar shipments) they should be attached to the article by strong wire. Shipments of greasy commodities, such as raw furs or skins, should be marked by attaching a smooth wooden strip to the bale; otherwise the grease of the package will obliterate the marks. The failure to show street address is responsible for a large number of shipments being delayed or remaining undelivered.

It should be unnecessary to call these simple matters to the attention of the shippers, but a very large percentage of the shipments held in the "On Hand" department of express companies result from failure to observe these precautions. Anything that the League can do to insure better packing and marking will be reflected in the increased efficiency of the

express companies, as well as in the reduction of the number of claims against express companies.

Frequently complaints are made by the express companies in regard to insecure packing and failure to properly tag or mark goods. Any improvement in this respect will undoubtedly increase the efficiency of the service.

ONE ON THE C.P.R.

Irish Barber Resents Efforts Put Forth to Make Him Change Sign on His Shop.

The following amusing letter is copied from the *South Shore Breeze*, a little publication issued by the boards of trade of the municipalities opposite Montreal. The editor says he is assured that the letter is genuine and that it passed recently through the office of one of the officials of the C.P.R. It runs as follows:—

DEAR SIR:

In accordance with our policy, our solicitor was instructed to notify certain parties, who were conducting different lines of business using the letters "C.P.R." such as the "C.P.R. Hotel," "C.P.R. Restaurant, Barber Shop," etc., that the use of the sign was illegal and they should be prosecuted.

One party received this notice who had a barber shop bearing the sign "C.P.R. Barber Shop—Cut Rates." Our solicitor has sent his reply, which reads as follows:

Dear Sir,

I got yune nottis. i dont want no law soot with yure big company, or i dont want to paint a new sine on my shop. Times is bad and i have a large wife and fambly to sport. i no yure company owns most everythink—railroads, steamers, most of the best land and the time, but i dont know as you own the hole alfabet. The letters on my shopp dunt stand for yure raleroad, but for somethink better. I left a mutter in ould Ireland. She is dedd and goun, but her memries dere to me. Her maden name was Christina Patricia Reardon, and what i want to no is what you are going to do about it. i suppose you wont argu that the balans of my sine what refers to cut rates has got anything to do with yure raleroad. There aint been no cut rates around these parts that I nos of.

(signed) Timothy O'Brien."

There is an element of reason in Tim's argument and defence I find difficult to combat, and if the trial were before a jury I am rather inclined to think we got the worst of it and Timothy would continue to do business at the old stand and under the old name.

I have heard of various methods of perpetuating the memory of departed relatives, but this is the first instance I have known of using a barber's pole as a tombstone.

With the numerous intricate problems that come before your department, perhaps you would favor me with some advice as to what course we should follow in dealing with this gentleman from the Emerald Isle.

Yours very truly,

INSVRANCE

AUGUST FIRE LOSSES.

According to estimates compiled by the *Monetary Times*, the fire loss throughout Canada during the month of August amounted to $1,230,183 as compared with $1,101,734 during July, and $1,057,109 during August of last year. This brings the total fire loss in Canada for the first eight months of the year to $11,976,631. The following figures represent the fire losses during the first eight months of the three preceding years:—

1914	$18,451,412
1915	8,811,188
1916	13,322,911

FREAKS OF WORKMEN'S COMPENSATION.

Inconsistencies of the workmen's compensation law as administered in some of the States are pointed out by the National Industrial Conference Board, an organization of manufacturing interests, in advocating a permanent, scientific and uniform system of compiling accident statistics.

The committee, after a thorough investigation, cited an instance where the Ohio Industrial Commission awarded compensations to the dependants of a stenographer, because, when taking dictation from her employer, she was murdered by a jealous suitor. Another instance was noted where the New York Industrial Commission awarded compensation for the death of a street railway process server from gangrenous diabetes, alleged to have resulted from having his toes trodden upon by a fellow-passenger in a car of the company which employed him.

The report says uniform laws would go far toward determining definite standards of liability and equitable compensation rates, and would enable legislators to judge the real hazards of various occupations and "permit extension of the compensation principle to many workers now arbitrarily excluded from its terms."

ARE YOU A PATRIOT?

Under the above heading, the National Fire Protection Association has issued an appeal which deserves the widest circulation. The following are some extracts:—

It is the duty of every citizen at this time to act as a *fire warder of the nation*, and to safeguard in every way the foodstuffs, the raw materials and the finished products of every sort. Are you alive to the danger of fire? Are you doing your bit for the stricken peoples?

This is your war: a moral war; a war to save life and property; not to destroy it. Can you answer these questions with satisfaction to your country, your state and to yourself?

Are your employees organized into an efficient fire-fighting unit?

Where is your nearest fire alarm box?

Whose business is it to turn in an alarm—by day—by night?

Are your chemical fire extinguishers charged and operative? How long since you looked them over?

Do you admit strangers to your plant?

Have you a night watchman?

Are your elevator shafts, areas, spaces under stairways and benches and dark corners clear of rubbish, oily waste and debris?

Is there smoking in your plant by your employees, or by you?

Are any matches except safety matches allowed in your plant?

Have you metal containers for rubbish? Are these emptied in a safe place daily?

Have your lighting and heating equipments been overhauled for winter?

Is your standpipe and hose equipment in order?

Is your water supply effective and reliable?

Is some one of your employees responsible to you for the care and absolute cleanliness of your plant? Do you know that this employee is giving strict attention to his duties?

GROUP LIFE INSURANCE.

This class of life insurance is every day becoming more popular among large manufacturing concerns in the United States. A firm with say 2,000 employees takes out a life insurance policy to cover each and every hand for a minimum sum, usually about $500, the amount sometimes increasing with the length of time the individual has been employed. It will be obvious that such a system, irrespective of the benefit accruing to the employees' dependents, is of very material assistance in inducing workmen to remain in the employment of the same firm, since the benefit of the insurance is lost immediately the employee leaves. Unfortunately Canadian manufacturers are debarred from endeavoring to solve their labor troubles by this method, since the Dominion Insurance Act contains a clause which is held to prohibit this class of insurance. Section 83 prohibits insurance companies from distinction or discrimination in favor of individuals between the insured of the same class and equal expectation of life in the amount of premiums charged, or in the dividends payable on the policy. Naturally a very considerable saving in expense is effected in taking out a large group policy, resulting in a material reduction in premium, which, it is held, would be discriminatory. On more than one occasion an attempt has been made to have the Insurance Act amended so as to permit the transaction of this class of insurance. These attempts have, however, met with violent opposition on the part of the fraternal societies and labor organizations. Since the amendment would ostensibly be solely of benefit to the workmen, the antagonism of the labor unions has proved sufficient to keep group insurance out of Canada, and it would appear that any further attempt to legalize it must be prefaced by convincing the beneficiaries.

TAXING FIRE LOSSES.

When the Ontario Government founded the Fire Marshal's Department, it was decided that the cost of the department should be borne by the insurance companies and, to that end, a provision was inserted in the bill, levying a tax of *not exceeding* one third of one per cent. of fire insurance premiums collected in Ontario. Apparently the insurance companies complained that they were being unfairly treated, for an amendment was hastily added to the bill, imposing a tax of 1 per cent. on all losses collectible from unlicensed insurance companies. This tax must, of course, be paid by the individual or firm whose property is destroyed by fire since the unlicensed companies, being outside Canadian jurisdiction, cannot be taxed. It needs no argument to show how absurdly unjust it is to make a man pay a heavy tax immediately after suffering a loss, to reinstate which he requires all his resources. In actual operation the tax has proved to be even more unfair than was at first apparent and is now frankly discriminatory. The sums received on account of fire losses alone were found practically sufficient to pay for the upkeep of the Fire Marshal's Department, as a result of which a rebate of 80 per cent. has been made to the insurance companies. No rebate whatever has been made to the individual taxpayers, so that 80 per cent. of the cost of the Fire Marshal's Department is now borne by a few unfortunate fire victims while the balance is distributed amongst about a hundred or more wealthy insurance companies. And this is in spite of the fact that the Fire Marshal's Act expressly provides that the insurance companies be taxed for the purpose of maintaining the Department.

NEW REFRACTORY OF GREAT POTENTIAL VALUE IN STEEL MAKING.

A new refractory material, zirconia, which has recently come to light, and is likely to play an important role in steel metallurgy, is described by the *Scientific American*. The two principal refractories now used are either basic or acid in nature; the new material is neither, but is regarded as neutral. It is acted upon by neither lime, magnesia, nor sand, and it is even claimed that any process, either acid or basic, can be carried out in a furnace lined with it.

Zirconia as a refractory and as an alloy in steel was discussed recently at a conference at Leeds, England, between the manufacturers of fireclay goods and others interested in the use of refractory materials. It was stated that in Germany patents had been taken out for the use of zirconia in a variety of ways. A zirconia-lined hearth of an open-hearth furnace in a steel works in Germany, after four months' continuous operation at a high temperature, was still in good condition, and capable of service at least four months longer before renewal would be necessary. Calculations based on some tests showed in actual maintenance cost a saving of over fifty per cent. in favor of zirconia lining as compared with the refractory lining ordinarily used. In these calculations no allowance was made for increased production and higher efficiency.

Another interesting application of zirconia was in the manufacture of ferro-zirconium, which had been successfully employed in Germany for producing zirconium steel, a particularly hard grade, for armor plates, armor-piercing projectiles, and bullet-proof steel. Before the war there was practically a German monopoly of the raw zirconia ore, which was mainly dealt with under German patents. This is now available for this and other countries, provided the experts could find a means for transferring it.

VISITED EASTERN CANADA.

Mr. A. A. Briggs, the advertising manager of the Dunlop Tire and Rubber Goods Co., has returned to the head office at Toronto after a lengthy tour in the interests of the Company. Last year Mr. Briggs covered the Western territory, going as far north as Alaska. This year he covered the Provinces of Canada to Sydney, C.B.

On these trips Mr. Briggs makes a thorough inquiry into the advertising conditions affecting the tire and rubber market locally and generally. He is usually in touch with the automobile clubs; makes it a point to meet all the important garage men and automobile dealers in every city he visits; and wherever possible he travels in an automobile so as to become thoroughly acquainted with the road conditions with which Dunlop Tires have to contend.

TARIFF

By J. R. K. BRISTOL

RE 7½% CUSTOMS DUTY ON BITUMINOUS COAL.

The values fixed on bituminous coal by the President of the United States represent the values for duty, notwithstanding that the purchase price may be higher, so long as such coal was purchased prior to the President's proclamation, viz.: August 24th, 1917. The Customs Department are required to make appraisements on the foregoing basis in view of Sub-section 5 of Section 43 of the Customs Act. This Section provides that duty shall not be assessed on less than the invoice value, except on account of reduction in the fair market value between the time of purchase and exportation to Canada. Under this provision in the Act the Customs authorities at Ottawa have instructed Collectors of Customs throughout Canada (in Appraisers' Bulletin No. 1571, dated September 14th, 1917), as follows:—

Bituminous Coal.

Bituminous coal purchased by the importer under contract made prior to August 24th, 1917, may, upon presentation to the Collector of Customs of the required documentary proof of purchase, as above, be appraised at the following values. Bituminous coal purchased on and after August 24th, 1917, shall be dutiable at not less than the invoice value to the purchaser in Canada.

NOTE.—Prices are f.o.b. mine basis for tons of 2,000 pounds.

	Run of Mine.	Prepared sizes.	Slack or Screenings.
Pennsylvania	$2 00	$2 25	$1 75
Maryland	2 00	2 25	1 75
West Virginia	2 00	2 25	1 75
West Virginia (N. River)	2 15	2 40	1 90
Virginia	2 00	2 25	1 75
Ohio (thick vein)	2 00	2 25	1 75
Ohio (thin vein)	2 35	2 60	2 10
Kentucky	1 95	2 20	1 70
Kentucky (Jellico)	2 40	2 65	2 15
Alabama (big seam)	1 90	2 15	1 65
Alabama (Pratt, Jaeger, and Corone)	2 15	2 40	1 90
Alabama (Cahabe, and Black Creek)	2 40	2 65	2 15
Tennessee (Eastern)	2 30	2 55	2 05
Tennessee (Jellico)	2 40	2 65	2 15
Indiana	1 95	2 20	1 70
Illinois	1 95	2 20	1 70
Illinois (third vein)	2 40	2 65	2 15
Arkansas	2 65	2 90	2 40
Iowa	2 70	2 95	2 45
Kansas	2 55	2 80	2 30
Missouri	2 70	2 95	2 45
Oklahoma	3 05	3 30	2 80
Texas	2 65	2 90	2 40
Colorado	2 45	2 70	2 20
Montana	2 70	2 95	2 45
New Mexico	2 40	2 65	2 15
Wyoming	2 50	2 75	2 25
Utah	2 60	2 85	2 35
Washington	3 25	3 50	3 00

WAR MEASURES.

Prohibited Exports to Norway, Sweden, Denmark and Holland.

By Order-in-Council, dated September 8th, 1917, the exportation of the following goods is prohibited to all destinations in Norway, Sweden, Denmark and Holland, viz.:—

All kinds of arms, guns, ammunition and explosives, machines for their manufacture or repair, component parts thereof, materials or ingredients used in their manufacture, and all articles necessary or convenient for their use;

All contrivances for or means of transportation on land or in the water or air, machines used in their manufacture or repair, component parts thereof, materials or ingredients used in their manufacture, and all instruments, articles and animals necessary or convenient for their use;

All means of communication, tools, implements, instruments, equipment, maps, pictures, papers and other articles, machines and documents necessary or convenient for carrying on hostile operations;

Coin, bullion, currency, evidences of debt, and metal, materials, dies, plates, machinery and other articles necessary or convenient for their manufacture;

All kinds of fuel, food, foodstuffs, feed, forage, and clothing, and all articles and materials used in their manufacture;

All chemicals, drugs, dyestuffs and tanning materials;

Cotton, wool, silk, flax, hemp, jute, sisal, and other fibres and manufactures thereof;

All earths, clay, glass, sand, and their products;

Hides, skins, and manufactures thereof;

Nonedible animal and vegetable products;

Machinery, tools and apparatus;

Medical, surgical, laboratory, and sanitary supplies and equipment;

All metals, minerals, mineral oils, ores, and all derivatives and manufactures thereof;

Paper pulp, books, and printed matter;

Rubber, gums, rosins, tars, and waxes, their products, derivatives, and substitutes, and all articles containing them;

Wood and wood manufactures;

Coffee, cocoa, tea and spices;

Wines, spirits, mineral waters, and beverages.

SHIPBUILDING.

Drawback of Customs Duty on Vessels Measuring Over 80 Tons Gross Tonnage.

An Order-in-Council in the above matter was passed on the 11th day of September, 1917. It provides for drawback of Customs duty on vessels measuring over 80 tons per gross tonnage if built in Canada on and after the first day of September, 1917.

PROSCRIBED FIRMS.

Trading With Enemy Persons in Neutral Countries and in Countries Allied with Great Britain.

A statutory list of persons and firms of enemy nationality or enemy association in countries other than enemy countries with whom persons and firms in Canada are prohibited from trading, has been issued by the Customs Department, Ottawa. Goods may not be imported from or exported to, either directly or indirectly, any person or firm mentioned in said list. This list will be found in a supplement to the *Canada Gazette* of September 8th, 1917. A copy is on file in the Tariff Department for the reference of members.

WAR MEASURES.

Prohibited Exports.

An Order-in-Council, dated 11th September, 1917, prohibits the exportation of steel rails to all destinations abroad other than the United Kingdom, British Possessions and Protectorates.

An Order-in-Council, dated 18th day of September, 1917, prohibits the exportation of screenings produced in cleaning wheat and other grains, to all destinations abroad other than the United Kingdom, British Possessions and Protectorates.

Regulation on Distribution and Control of Price of Prohibited Exports of Metal and Fibre.

On the 15th day of September, 1917, an Order-in-Council was passed at Ottawa to provide for the regulation of the price, sale, control, storage, distribution and transport of scrap iron and scrap steel, rags, waste and other materials of metal or of animal, vegetable or mineral fibre. These provisions are as follows:—

1. The Minister of Customs is hereby authorized and empowered to fix the price of scrap iron and scrap steel, rags, waste, and other materials of metal or of animal, vegetable or mineral fibre furnished to users and dealers by sellers thereof in Canada from time to time, from 1st September, 1917.

2. The Minister of Customs is further authorized and empowered to make such order or orders as he may deem necessary or advisable for the distribution and delivery of the aforesaid materials by the sellers and owners thereof to users or intending purchasers.

3. All orders and regulations made by the Minister under this authority shall have the force of law.

4. The Governor-General in Council may appoint an Officer to be known as "Supervisor of Metal and Fibre," who shall hold office during His Majesty's pleasure.

5. It shall be within the power of and it shall be the duty of the Supervisor of Metal and Fibre:

(*a*) To make such inquiry and investigation as the Minister of Customs deems necessary or directs, into the quantity, location and ownership and into the sources of supply of the said materials and into the prices at which same is sold or held for sale and the causes of such prices.

(*b*) To advise the Minister of Customs as to the fair and reasonable prices to be fixed for such materials in Canada.

(*c*) To report to the Minister of Customs from time to time in respect of the matters in his charge.

(*d*) To enforce all orders and regulations made by the Minister of Customs under this Order in Council.

6. For all the purposes of this Order in Council the Supervisor of Metal and Fibre shall have the power of a Commissioner appointed under the provisions of part one of the Inquiries Act.

7. The salary of the said Supervisor shall be such as may from time to time be prescribed by the Governor in Council.

8. Any person who contravenes or fails to observe any of the provisions of this Order in Council, or any regulation or order made thereunder shall be guilty of an indictable offence, and liable upon indictment and conviction to a fine not exceeding $5,000.00 or to imprisonment for any term not exceeding three years, or to both fine and imprisonment as specified; and any director or officer of any company or corporation who assents to or acquiesces in the contravention or non-observance by such company or corporation of any of the provisions of these regulations shall be guilty personally and cumulatively with his company or corporation, and with his co-directors or associate officers.

Mr. H. D. Bayne has been appointed Supervisor of Metal and Fibre. His address is c/o Department of Customs, Ottawa.

TREATY WITH PORTUGAL.

The Customs Department announce, under date September 17, 1917, that under the provisions of a Treaty of Commerce and Navigation between the United Kingdom and Portugal, certain natural and manufactured products of Portugal and the adjacent islands (Madeira, Porto Santo, and Azores) are entitled to entry for duty in Canada on and from September 23rd, 1916, upon terms and conditions granted in respect of like natural and manufactured products of France, under the French Treaty.

UNITED STATES EXPORT RESTRICTIONS.

The President of the United States, by proclamation dated August 27th, 1917, provides for a general restriction of exports. The part of this proclamation which affects shipments to Canada, follows:—

I do hereby further proclaim to all whom it may concern that the public safety requires that, except at such time or times, and under such regulations and orders, and subject to such limitations and exceptions as the President shall prescribe, until otherwise ordered by the President or by Congress, the following articles, namely: Coal; coke; fuel oils, lubricating oils, hand-lantern oil, naphtha, benzine, red oil, kerosene and gasoline; all bunkers; food grains, flour and meal therefrom, corn flour, barley, rice flour, rice, oatmeal and rolled oats, fodder and feeds, oil cake, oil-meal cake, malt, and peanuts; all meats and fats, poultry, cottonseed oil, corn oil, copra, desiccated cocoanuts, butter, fresh, dried and canned fish, edible or inedible grease of animal or vegetable origin; linseed oil, lard, tinned milk, peanut oil and butter, rapeseed oil, tallow, tallow candles, and stearic acids; sugar, glucose, syrup and molasses; pig iron, ferrosilicon, and spiegeleisen; steel ingots, billets, blooms, slabs, and sheet bars; iron and steel plates, including ship, boiler, tank and all other iron and steel plates one-eighth of an inch thick and heavier, and wider than six inches; iron and steel structural shapes, including beams, channels, angles, tees and zees of all sizes; fabricated structural iron and steel, including beams, channels, angles, tees, zees, and plates, fabricated and shipped knocked down; scrap iron and scrap steel; ferromanganese; tool steel, high-speed steel and alloy steels and machine tools; steel-hardening materials; fertilizers, including cattle and sheep manure, nitrate of soda, poudrette, potato manure, potassium salts, land plaster, potash, cyanamid, phosphoric acid, phosphate rock, superphosphate, chlorate of potash, bone meal, bone flour, ground bone, dried blood, ammonia and ammonia salts, acid phosphates, guano, humus, hardwood ashes, soot, anhydrous ammonia; aeronautical machines and instruments, their parts and accessories thereof; arms and ammunition; all explosives, nitrate of potash, rosin, saltpeter, turpentine, ether, alcohol, sulphur, sulphuric acid and its salts, acetone, nitric acid and its salts, benzol and its derivatives, phenol (carbolic acid) and its derivatives, toluol and its derivatives, mercury and its salts, glycerine, potash and its salts, all cyanides and films; carrier and other pigeons, anti-aircraft instruments, apparatus and accessories; all radio and wireless apparatus and its accessories; optical glass, optical instruments and reflectors; cotton and cotton linters; wool, wool rags, wool and khaki clippings, and wool products; flax, sisal, jute, hemp and all manufactures thereof; hides, skins, leather, leather belting, sole and upper leather, leather boots and shoes, harness and saddles and leather clothing; soap and soap powders; all engines and motors operated by steam, gas, electricity or other motive power and their accessories; metal and wood-working machinery; oil-well casing, oil-well drilling implements and machinery and the accessories thereof; steam boilers, turbines, condensers, pumps and accessories thereof; all electrical equipment; crucibles, emery, emery wheels, carborundum and all artificial abrasives; copper, including copper ingots, bars, rods, plates, sheets, tubes, wire and scrap thereof; lead and white lead; tin, tin plate, tin cans and all articles containing tin; nickel, aluminum, zinc, plumbago and platinum, newspaper, print-paper, wood pulp and cellulose; ash, spruce, walnut, mahogany, oak, and birch woods; and industrial diamonds, shall not, on and after the 30th day of August, in the year One Thousand Nine Hundred and Seventeen, be exported from, shipped from, or taken out of the United States or its territorial possessions to Abyssinia, Afghanistan, Argentina, that portion of Belgium not occupied by the military forces of Germany or the colonies, possessions, or protectorates of Belgium, Bolivia, Brazil, China, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Egypt, France, her colonies, possessions or protectorates, Guatemala, Haiti, Honduras; Italy, her colonies, possessions or protectorates; Great Britain, her colonies, possessions or protectorates; Japan, Liberia, Mexico, Monaco, Montenegro, Morocco, Nepal, Nicaragua, the colonies, possessions or protectorates of the Netherlands, Oman, Panama, Paraguay, Persia, Peru; Portugal, her colonies, possessions, or protectorates; Roumania, Russia, Salvador, San Marino, Serbia, Siam, Uruguay,

Venezuela (excluding any portion of the foregoing occuped by the military forces of Germany or her allies), or any territory occupied by the military forces of the United States or by the nations associated with the United States in the war.

The regulations, orders, limitations, and exceptions prescribed will be administered by and under the authority of the Exports Administrative Board, from whom licenses, in conformity with said regulations, orders, limitations, and exceptions, will issue.

In witness whereof, I have hereunto set my hand and caused the seal of the United States of America to be affixed.

Done at the City of Washington this 27th day of August, in the year of our Lord one thousand nine hundred and seventeen, and of the Independence of the United States of America the one hundred and forty-second.

WOODROW WILSON.

By the President:
ROBERT LANSING, *Secretary of State.*

In regard to most articles mentioned in the foregoing list, it is understood that the United States exporter will not be unduly restricted in obtaining license for exportation to Canada. As a general rule the application for license should be made on Form A2. The United States exporter can obtain these forms from domestic representatives of the Exports Administrative Board, on application. If Canadians need these blank forms they can obtain same from the Department of Trade and Commerce, Ottawa, or from the Canadian Manufacturers Association, Toronto.

The Exports Administrative Board has announced a list of commodities, in addition to those published on September 17, 1916, whose conservation is necessary on account of the limited supply and the needs of the United States in its successful prosecution of the war. Accordingly, the Board has practically prohibited the exportation of the following articles:

Oil-well casing;
Boring mills, vertical, 42-inch and larger;
Lathes, with 30-inch swing and larger;
Planers, metal working, 36-in. and larger;
Caustic soda;

and will subject applications for the following articles to the Food Administrator for his approval:

Food grains and fodder (including, among others, wheat, corn, rice, barley, oats, rye, oil cake, and oil-cake meal); animal fats;
Vegetable oils and soap.

Export licenses may be granted, however, for the above articles when destined for actual war purposes, or when they will directly contribute thereto; and in certain unusual cases when such exports will contribute directly to the immediate production of important commodities required by the United States; and also in certain other cases where the articles may be exported in limited quantities without detriment to this country, such as food grains and fats, which require the approval of the Food Administrator.

Shipments in Transit to Canada, Newfoundland and Mexico.

Individual licenses will be required for shipments to Canada, Newfoundland, and Mexico, for all of the above-mentioned articles which are covered by railroad and / or ocean bill of lading dated on or after October 1, 1917. This date has been fixed in order to avoid interference with goods in transit.

Shippers' attention is called to the fact that where the quantities to be shipped are less than 125 bushels of food grains, 25 barrels of flour, 125 pounds of butter, or 25 barrels of sugar, and are destined for Canada, Newfoundland, or Mexico, they may be licensed by the indorsement of the collector of customs at the point of exit when the shipper presents to the collector the usual shipper's export declaration. Where it is ascertained that exporters are making applications for an excessive or unusual number of licenses for small shipments to the same consignee, in order to avail themselves of the facilities offered by the above plan, applications will be refused by the collector and licenses previously issued will be revoked.

The addition of the above articles makes a completed conservation list, as follows:

Acetone,
Alcohol,
Aluminum,
Ammonia salts,
Ammonia nitrate,
Anhydrous ammonia,
*Animal fats,
Arsenate of lead,
Arsenate of soda,
*Cottonseed oil,
Cyanide of sodium,
Ferro-manganese,
Ferro-silicon,
Ferro-vanadium,
Flax,
*Food grains (including among others, wheat, barley, corn, rice, oats, and rye).
Glycerine,
Iron and steel plates, including ship, boiler, tank, and other iron and steel plates ⅛ of an inch thick and heavier and wider than 6 inches, whether plain or fabricated,
*Lard,
*Lard compound,
Lathes with 30-inch swing and larger,
Mercury salts,
Nitrate of soda,
Nitric acid,
Oil well casing,
*Oil cake,
*Oil cake meal,
Phosphoric acid,
Phosphorus,
Pig iron,
Planers, metal working, 36 inches wide and larger,
Boiler tubes (iron and steel),
Boring mills, vertical, 42 inches and larger,
*Butter,
Carbolic acid (phenol),
*Castor oil and castor beans,
Caustic soda,
Chrome nickel steel,
Cotton linters,
Potash and chlorate of potash,
Potassium salts,
Saltpeter,
Scrap iron,
Scrap steel,
Searchlights and generators (suited for Army or Navy use),
*Soaps,
Sodium sulphite,
Spiegeleisen,
*Stearine and stearic acid,
Steel billets,
Steel blooms,
Steel ingots,
Steel sheet bars,
Steel slabs,
*Sugar,
Sulphate of ammonia,
Sulphur and sulphuric acid,
Superphosphate,
*Tallow,
Tin plate,
Toluol,
Tungsten,
*Vegetable oils,
Wireless apparatus,
*Wheat,
*Wheat flour,
Wool rags.

Important Information for Shippers.

In making this announcement the Exports Administrative Board takes occasion to advise exporters and commission agents of the necessity of securing export licenses before making purchases for export or engaging freight space or tonnage for all articles on the conservation list. The granting of export licenses for the shipment of the food products and fats in the "Conservation List" (all commodities marked *) to countries other than those associated with the United States in the war is now being delayed; as, on the advice of the Food Administration, it is not desired to have any considerable quantities of the above articles exported. Heretofore, many applications have been made by telegraph, but this practice will not be necessary, if the above advice is followed, as telegraphic applications cannot receive a preference.

Applications may be made at the Bureau of Export Licenses, 1435 K Street, N.W., Washington, D.C., or at its branch offices or agencies at other points.

Shipments in Transit to Canada.

"To facilitate exports to Canada and Newfoundland the Bureau of Export Licenses has heretofore issued through the customs service a special license whereby goods have been

permitted to enter Canada and Newfoundland without individual licenses for each shipment, except in the case of certain articles which the Exports Administrative Board has heretofore found it necessary to conserve, namely:

"(1) Iron and steel plates, including ship, boiler, tank, and all other iron and steel plates ⅛ of an inch thick and heavier and wider than 6 inches, whether plain or fabricated; iron and steel scrap; pig iron, steel billets; for which individual licenses have been required for shipments made on bills of lading dated on or after August 16, 1917.

"(2) Ferro-manganese, ferro-silicon, spiegeleisen, steel sheet bars, steel blooms, steel ingots, steel slabs, for which individual licenses have been required for shipments made on bills of lading dated on or after August 29, 1917.

"(3) Sugar, butter, wheat, wheat flour, for which individual licenses have been required for shipments made on bills of lading dated on or after September 17, 1917.

"All the other articles above-mentioned, which are now added to the 'Conservation List' in accordance with this statement, will likewise require individual licenses for each shipment of such additional conserved commodities as are covered by bills of lading dated on or after September 20, 1917. This date has been fixed in order to avoid interference with goods in transit.

Application Forms.

"To procure export licenses for articles on the 'Conservation List' shippers must use Application Form A-3 for proposed shipments of pig iron; ferro-manganese; ferro-silicon; spiegeleisen; steel ingots; billets, blooms, slabs, and sheet bars; iron and steel plates, including ship, boiler, tank (and all other iron and steel plates one-eighth of an inch thick, and heavier and wider than six inches, whether plain or fabricated); scrap iron; scrap steel, when destined to any country in the world."

The Tariff Department of the Canadian Manufacturers Association asked the Exports Administrative Board, Washington, under date September 21, 1917, for information as to the articles which would only be licensed for shipment into Canada under Form A-3. The reply of the Exports Administrative Board is dated September 28, 1917, and reads as follows:—

"You are advised that under present rulings Form A-3 should be used in making application for export license to any country of the world when it is desired to export the following commodities:

Pig iron,
Ferro-manganese,
Ferro-silicon,
Spiegeleisen,
Steel ingots, billets, blooms, slabs and sheet bars,
Iron and steel plates, including ship, boiler, tank (and all other iron and steel plates ⅛ of an inch thick and heavier, and wider than 6 inches, whether plain or fabricated).
Scrap iron,
Scrap steel."

FOREIGN TRADE OF CANADA.

(Comparison 1915, 1916, 1917.)

IMPORTATIONS.

	Month of August.			Five Months Ending August.		
	1915	1916	1917	1915	1916	1917
Dutiable Goods	$24,205,170	$38,398,579	$52,966,903	$102,075,678	$178,631,967	$255,437,248
Free Goods	16,627,652	33,932,435	38,964,106	73,486,521	143,566,914	218,594,611
Total	$40,832,822	$72,331,014	$91,931,009	$175,562,199	$322,198,881	$474,031,859
Coin and Bullion	812,891	17,721,634	1,489,254	3,244,799	19,611,632	5,976,385
Grand Total	$41,645,713	$90,052,648	$93,420,263	$178,806,998	$341,810,513	$480,008,244
Duty Collected	8,430,565	12,096,555	15,171,161	36,511,037	58,160,063	75,699,900

EXPORTATIONS.

(For August).

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$6,090,379	$3,776,549	$7,636,581	$33,964	$7,421,875	$23,679
The Fisheries	1,810,572	2,578	1,816,651	697	2,048,215	7,958
The Forest	5,846,897	391	6,209,357	185,261	4,700,686	6,228
Animals and their Produce	9,193,103	146,655	11,779,483	171,840	19,463,416	702,827
Agricultural Products	6,895,726	3,448,795	35,207,729	1,120,486	60,146,810	3,453,559
Manufacturers	10,690,464	378,123	33,197,925	563,392	52,236,233	1,777,232
Miscellaneous	567,013	151,239	243,302	154,493	370,351	204,276
Total Merchandise	$41,094,154	$7,904,330	$96,091,028	$2,230,133	$146,387,586	$6,175,759
Coin and Bullion	.....	4,754,398	.....	32,344,620	290	973,510
Grand Total Exports	$41,094,154	$12,658,728	$96,091,028	$34,574,753	$146,387,876	$7,149,269

EXPORTATIONS.

(For Five Months Ending August).

	1915		1916		1917	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$24,496,114	$6,437,390	$33,961,496	$110,289	$28,961,238	$112,104
The Fisheries	6,682,760	18,690	7,963,141	9,288	7,277,760	70,861
The Forest	22,044,376	4,457	25,777,811	192,959	23,112,347	31,757
Animals and their Produce	34,745,406	1,434,037	41,199,174	1,485,681	62,900,080	1,604,593
Agricultural Products	48,207,048	8,585,880	180,977,292	2,606,750	239,997,023	6,585,257
Manufactures	62,231,845	2,389,517	153,022,063	3,300,702	289,716,536	8,370,008
Miscellaneous	1,854,864	528,316	3,535,356	588,262	2,277,276	1,005,799
Total Merchandise	$200,262,413	$19,398,787	$446,436,333	$8,294,931	$654,242,260	$17,780,379
Coin and Bullion	.....	68,577,303	1,157	190,548,427	227,765	1,719,771
Grand Total Exports	$200,262,413	$87,976,090	$446,437,490	$198,843,358	$654,470,025	$19,500,150

Trade Enquiries

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

936. **Enamelware.**—A firm of wholesale merchants, with headquarters in Kuala Lumpur, Federated Malay States, and having connections throughout the Malay Peninsula, would like to make arrangements to represent Canadian manufacturers of enamelware.

937. **Saw-Milling Appliances.**—The Director of the Government Department in Siberia, having charge of the cutting down of timber from the State forests, is desirous of receiving quotations and other particulars from Canadian manufacturers of logging equipment and saw-milling machinery, particularly with regard to portable hoisting cranes, saw-milling machines adapted for cutting railway sleepers, and machines for making the parts of portable houses for colonists of the Canadian type.

938. **Machines and Appliances.**—An important official organization in Omsk, Siberia, is desirous of receiving catalogues and other particulars from Canadian manufacturers of tools, lathes, metal-working machines and appliances.

939. **Household Utensils.**—An East London (South Africa) firm desires catalogues and price lists on household utensils of all kinds, more particularly in the cheaper lines.

940. **Spades and Shovels.**—A Bloemfontein firm ask for catalogues and price lists of spades and shovels.

941. **Iron and Steel Carriage Material.**—An East London (South Africa) firm manufacturing carriages, carts and wagons request particulars from Canadian manufacturers of iron and steel supplies for their trade, including spring steel, axles, springs, scrolls, etc.

942. **Canadian Export to South America.**—One of the largest trading organizations in the world, with branches in many countries and having unusual facilities of long standing for reaching the South American market, has recently established a branch in Montreal, and is desirous of communicating with Canadian manufacturers interested in reaching South American countries.

943. **Enameled Ware.**—A firm in St. Vincent, B.W.I., desires to be put in touch with Canadian manufacturers of enameled ware.

944. **Biscuits.**—A Barbados commission agent is anxious to get in touch with Canadian manufacturers of biscuits.

945. **Trade with Brazil.**—A commission merchant long established in Brazil, with excellent references and facilities for carrying on correspondence in Portuguese, Spanish, French and English, desires to make connections with Canadian manufacturers in every line.

Electro GALVANIZING

Work handled promptly and at reasonable prices.

Send samples and specifications.

Guaranteed to stand Government Test.

THE PEDLAR PEOPLE

Established 1861 Limited

Executive Offices and Factories:
OSHAWA, ONT.

Branches:
Montreal, Ottawa, Toronto, London, Winnipeg
Vancouver

Power and Labor Cost Less
—IN—
PETERBOROUGH
ONTARIO

ARE you paying too much for electricity? Peterborough owns its Hydro-Electric System and sells at cost.

Is your power unreliable? Peterborough has emergency reserve lines.

Is Labor scarce, costly and unsettled? Our Manufacturers have been remarkably free from labor troubles, and have not had trouble in procuring labor of all classes. Peterborough is a City of home-owners, where living expense is low, Wages according.

Are freights too big an item with you? Peterborough offers

EXCELLENT TRANSPORTATION



The City is situated on the main highways of the C.P.R. and G.T.R., and connected by canals with Waterways. It is the centre of Canada's population, between Montreal and Toronto, thus enabling you to reduce mileage to the minimum for national distribution.

MANUFACTURERS INVITED

There are over sixty factories in Peterborough to-day, the largest employing 2,000 hands. The City offers every encouragement to Manufacturers and is holding a number of choice sites alongside railways. For further particulars, write, telegraph or telephone to

The City Clerk, Peterborough
Ontario Canada



"Let Me Help You Carry the Burden, Mother"

"If Canada fails us in October, we must curtail many of our activities."

SIR ARTHUR STANLEY, Chairman Executive Committee, British Red Cross.

It now costs $300,000.00 a week to carry on the work of the British Red Cross, or $16,000,000.00 a year.

Every minute of the day and night it costs $30 to minister to the sick and wounded and dying.

Last year Ontario's magnificent contribution paid for the entire work of the British Red Cross for nearly six weeks.

This year, in view of the greater need, it is earnestly and confidently hoped that Ontario's contributions will be as great proportionately as the magnificent offering last year.

Our trust is that the Citizens of Ontario will give generously to this noble cause on—

"OUR DAY," OCTOBER 18

A Few Facts about British Red Cross Work

The British Red Cross Society is the only institution which carries voluntary aid to the Sick and Wounded of the British forces on land and sea in every region of the War.

Its work is, therefore, the concern of all classes of British subjects, whether living in the British Isles, in the Dominions and Colonies beyond the seas, or in foreign countries.

IN GREAT BRITAIN

57,000 Hospital Beds found in the United Kingdom.

30,000 of these provided with Nursing Staff.

2,000 Trained Nurses working at home and abroad.

7,500 V. A. D.'s helping in Army Hospitals.

$220,000 spent on equipment of King George Hospital (1,850 beds); and

$130,000 a year contributed to cost of its maintenance.

$225,000 spent on building and equipping Netley Red Cross Hospital (1,000 beds); and

$625,000 spent on maintenance.

$175,000 for Orthopædic Curative Workshops and Training Fund.

$185,000 for Facial Injury Hospitals.

Organization of Resources Committee, Parliament Buildings, Toronto.





Listen–

Two manufacturers in a noon-day duet for your enlightenment

"That you, Joe? All right, I'll call for you, and we'll go to lunch. It's just 12 o'clock. By the way, I notice your employees are out on the street."

"Of course they are—dinner hour—where are yours?"

"They are probably ringing out their time on the Time Recorder at this minute. How in the world do your employees get out on the street at 12 o'clock without quitting their work a few minutes too soon?"

"Say, you've asked me something. I must look into that."

"Here is a chance for you to make a big saving, for what happens at 12 o'clock happens at 6 o'clock, and the bad habit is as harmful as the lost time."

"Well, we have a time-keeper."

"Well, where is he? What happens at 12 o'clock may be happening at each one of your four daily shifts—isn't that right?"

"I don't see how you can check that."

"Yes, it can be checked and the lost working time you will save will be enough to pay an extra dividend."

"Well, do you mean to tell me that you get 100% of the labor-time you buy?"

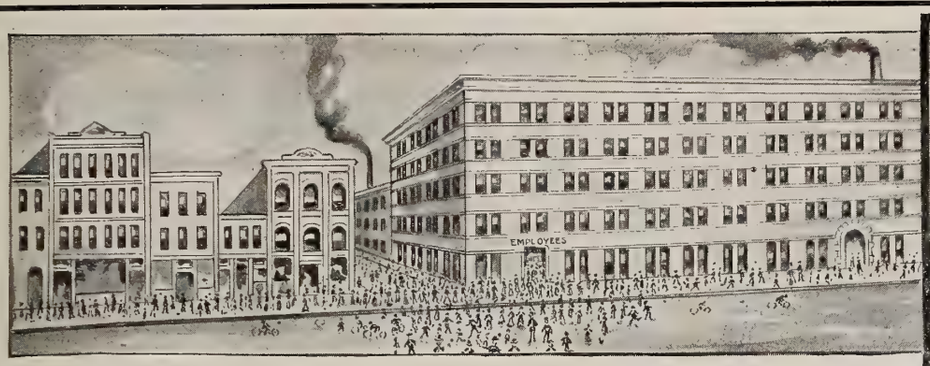
"That's it, you have it first guess."

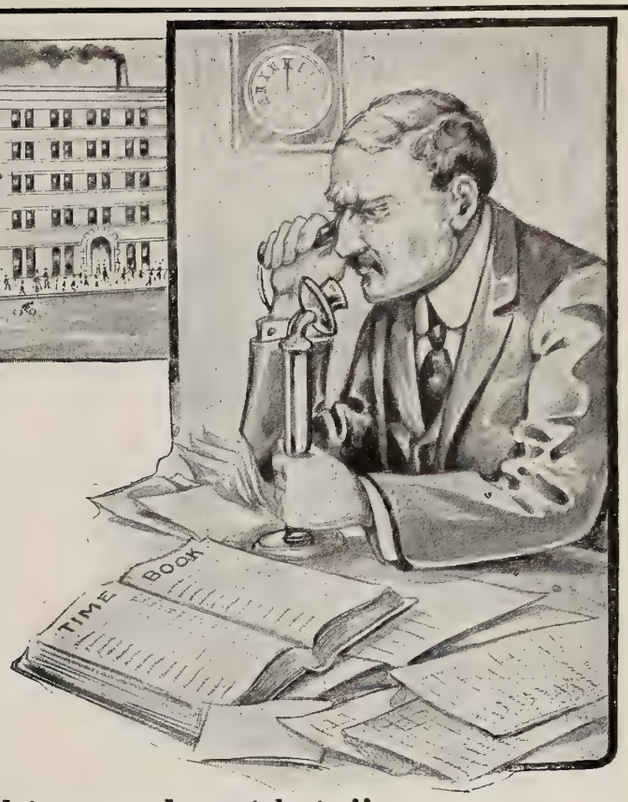
Pretty big thing to get, isn't it? considering that labor-time is the biggest raw material he or any other manufacturer buys. This affects you too. Let us show you how.

The International Time Recording Co. of Canada, Limited

270 Dundas St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG VANCOUVER MONTREAL





Listen–

Maybe this real time-buyer is a competitor of yours

"Well, what system do you use and what does it cost?"

"I use an International Time Recording System and the cost has nothing to do with it."

"How do you figure that out?"

"We figure it out from experience. It cost us many times more in lost labor and lost production previous to installing Internationals than it did to get the equipment."

"Well, how does it affect your employees?"

"Bully! We have no disputes, as the men register their own time. In fact we are now also considering very favourably additional equipment —the International Cost Recorders."

"What for?"

"So we will get the exact labor cost on every job."

"What will you gain by that?"

"We will know exactly the difference between our productive labor and our expense labor. In other words, our costs will be accurate."

"Can I take an hour at your plant this afternoon and see what your system is?"

"You can, and I hope it will do you good."

Let us send you, Mr. Reader, our latest folders and information on the value of a scientific machine-run time-keeping system in your plant. It will get you all the working time you pay for.

The International Time Recording Co. of Canada, Limited

270 Dundas St., TORONTO—F. E. MUTTON, General Manager

WINNIPEG VANCOUVER MONTREAL

INTERNATIONAL TIME SYSTEMS

946. **Lumber.**—A correspondent makes enquiry for the best Canadian source of supply for prompt shipment of the following: 500 dry rock maple wrest planks for piano, size 4 feet by 9 inches by 2 inches thick; 1,000 feet rock maple, about 12 inches by 1, any length; 500 dry rock maple wrest planks, 4 feet 8 inches long, 9 inches wide, 2 inches thick; 1,000 feet birdseye maple veneer; 1,000 feet Canadian walnut veneer. All to be guaranteed in sound condition and thoroughly dry, for piano-making.

947. **Dairy Utensils and Implements.**—A Queenstown firm of wholesale jobbers request catalogues and price lists quoting f.o.b. Canadian ports, and full details regarding packing, on dairy machinery, implements and utensils.

MADE IN CANADA

Blacksmiths'
Boiler Makers'
Machinists'
AND
Pipe Fitters'
Tools

Write for Catalogue

A. B. Jardine & Co.
LIMITED
HESPELER, ONTARIO

Condensed Advertising

MANUFACTURING BUSINESS FOR SALE.

Good established knitting factory for immediate sale on account of owner's sickness. Apply to Box 963, INDUSTRIAL CANADA Office, Toronto.

WAREHOUSE SPACE TO RENT.

Having at my disposal large warehouse space here in the City of St. John, N.B., the best distributing point in the Maritime provinces, I would like to hear from manufacturers and others, who may wish to locate here a stock of their goods for quick delivery to their customers in these provinces. I have an intimate knowledge of transportation facilities in these provinces, and will undertake all details of re-shipment, etc. Correspondence invited, references given. W. C. ROTHWELL, P.O. Box 293, St. John, N.B.

AGENCY WANTED.

Advertiser, residing in Vancouver, B.C., of good standing and well connected locally, wishes to secure agency in British Columbia for good selling lines. Stationery goods or similar lines preferred. Highest references. Write in confidence, Box 444 INDUSTRIAL CANADA, 1404 Traders' Bank Bldg., Toronto, Ont.

CANADIAN COLLAPSIBLE TUBE CO., Limited
MANUFACTURERS OF
"Premier" Pure Tin, Plain and Decorated Collapsible Tubes
381 ADELAIDE ST. WEST - - - TORONTO

AGENCY WANTED Old established firm of Manufacturers' Representatives would like to hear from Eastern Manufacturer desirous of increasing his Western Sales.
FEILMAN & JARDINE
FARMER BUILDING WINNIPEG, MAN.

RIDOUT & MAYBEE
Solicitors of Patents
Counsel, Solicitors and Experts in
PATENT SUITS
Agencies in the leading countries of the World.
EDWARD MAYBEE, Mech. Eng. J. F. EDGAR, Counsel.
59 YONGE STREET, TORONTO

KEGS - HALF-BARRELS - BARRELS - DRUMS

Send us a sample order as an experiment, and you will be impressed with the shortcomings of the old-fashioned wooden barrel.

The Smart-Turner Machine Co.
Limited
HAMILTON - CANADA



Old Tyme Pure Maple Syrup

AND

Maple Butter

SOLD EVERYWHERE

Maples Limited

Manufacturers and Refiners

TORONTO CANADA

DENNISTEEL

Made in Canada

WORKSHOP TOOL STAND



This inexpensive piece of steel shop equipment is a great money and time saver.

It takes proper care of costly tools, saves breakage, ill-usage and loss, prevents workmen wasting time looking for articles when needed.

Let Us Send Illustrated Folders

THE DENNIS WIRE AND IRON WORKS CO. LIMITED

LONDON CANADA

SAVE ENERGY— CONSERVE MAN-POWER— ELIMINATE WASTE MOTION

There's one sure, proven way of conveying ***your product*** from point to point—it's the Mathews way.

They require no power, are noiseless and durable. They can be installed anywhere—are for every business that embodies the movement of merchandise and raw material.

What are your conveying problems—we can solve them—economically—positively?

Our sales engineer will be around your way soon. He'll call at "your say so." Your name on your letterhead will fetch you interesting facts in booklet form about conveyers as they interest you.

Factories at—
Toronto, Ont.
London, Eng.
Ellwood City, Pa.

Your Branch—
484 Richmond St. West, Toronto, Ont.

SPEED — The MATHEWS WAY — CARRIER COMPANY LIMITED — ECONOMY — The SAVING WAY — GRAVITY — CANADIAN MATHEWS

The "Feel" of a Good File

DID you ever watch a really capable mechanic test a file? He has a way of passing a sensitive thumb over its teeth. Instinctively, unfailingly, he thereby determines whether it is fit for use.

This man always chooses "FAMOUS FIVE." He never buys blindly. He can "feel" that a "FAMOUS FIVE" is right. He can "feel" its sharp, keen-cutting teeth, arranged in rows of perfect uniformity. There is no doubt in his mind. He buys "FAMOUS FIVE." He makes sure of satisfaction.

Specify "FAMOUS FIVE" Files when ordering.

They are:



Among the Industries

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

*** Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Macleod.

Alberta Flour Mills propose to erect a flour mill shortly.

BRITISH COLUMBIA.

Ladysmith.

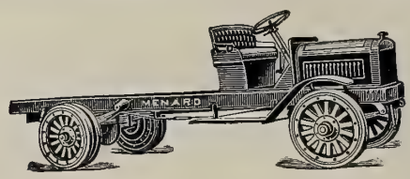
The Ladysmith Smelting Corporation will install a converting plant for treating copper ore.

Nanaimo.

The plant of the Mountain District Brick and Tile Company, representing an outlay of $25,000, and situated two miles from this city, near East Wellington, was completely destroyed by fire.

Princeton.

The Canada Copper Corporation will begin erection of its 3,000-ton mill on its property near Princeton, B.C., immediately. Development in the mines is being pushed that mill may run to capacity as soon as possible after it is com-



The
Menard Motor Truck
is
MADE IN CANADA

Every owner of a MENARD
is a booster for the MENARD

Write for catalogue and prices

Menard Motor Truck Co., Ltd.
Windsor - Ontario, Canada

Help Canada Maintain Her Financial Freedom!

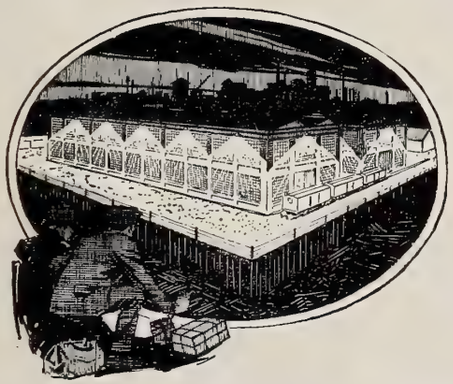
We can carry our heavy war-debt if the bulk of the interest goes to Canadian investors, and so is used again in the country's development. But it will be a serious handicap if a large proportion of the interest has to be sent outside the Dominion.

Do your share towards financing the war with Canadian rather than outside capital. Save and invest every dollar you can in War Savings Certificates, on sale at every Bank and Money Order Post Office.

The National Service Board of Canada

(Space donated by MacKINNON, HOLMES & CO.)

HYDRO QUALITY LAMPS—



Investigate Your Requirements and Purchase NOW

Do not run any danger of another lamp shortage similar to last year. At the very attractive prices we are selling Hydro lamps, you can well afford to equip your plant with fresh, efficient—therefore economical—lamps. Sliding scale prices for quantities Quality: best in the market.

Toronto Hydro-Electric System

282 Yonge St.
Phone Adelaide 2120

Branch—Gerrard & Carlaw
Phone Gerrard 761

Chemical Fire Engines

For Factory–Village–City. Capacities 20, 40, 50, 70 Gal.

OUR "JUNIOR" 40 GAL. ENGINE WITH MANY IMPROVEMENTS OVER THE ORDINARY TYPE, SELLS AT $150.00

The R. S. BICKLE COMPANY

WINNIPEG MONTREAL QUEBEC ADDRESS ENQUIRIES TO HEAD OFFICE, WOODSTOCK



HIGH-CLASS
MADE-IN-CANADA

AIR COMPRESSORS

Send us your inquiries

HAMILTON MOTOR WORKS, LIMITED
HAMILTON CANADA

LINK-BELT

LINK-BELT is made in a variety of types, each suited to specific duty in elevating, conveying and power transmission. We are the manufacturers of the original Ewart Link-Belt, as well as numerous other types.



"C" Class Link-Belt
For handling gritty
and abrasive materials.

Submit your problems in the handling of materials in bulk and packages to our experienced engineers for solution. We can devise simple systems for elevating, conveying and power transmission that will save labor and time in your plant.

This is the

Mark of Quality

It appears on every Link-Belt manufactured by us, and is your guarantee of reliability in material, workmanship, inspection and service.

CANADIAN LINK-BELT CO., LTD.

Manufacturing Plant and Offices at
265 WEST WELLINGTON ST.
TORONTO

pleted. Anticipating operations on a large scale, the company is building a modern town on its property and an extensive power plant is being installed.

Trail.

The Granby Copper Company expect to spend considerable money this year in the erection of extensions to their plant.

Vancouver.

The Wallace Shipyards, of North Vancouver, will establish a plant at False Creek.

The International Chemical Co., Limited, is now completing the installation of equipment for a potash plant on the Queen Charlotte Islands. The company is controlled by Cleveland and Chicago capital.

Messrs. J. Coughlan & Sons are constructing six steel steamers of 88,000 dead-weight tons capacity. These vessels are 425 feet long, 54 feet beam and 29.2 feet moulded depth. They are turbine-driven, with Scotch boilers, built at the company's own shops in Vancouver.

Frames for the second wooden steamer of the six being constructed by the Western Canada Shipyards, Limited, for the Imperial Munitions Board, have been hoisted into place. The first vessel has taken shape, the last frame having already been placed in position.

Victoria.

The Cameron-Genoa Mill Shipbuilders will launch the fifth auxiliary schooner contracted for by the H. W. Brown interests shortly and the sixth vessel of the same type will be launched about November 15th, thus completing the



STEEL BARS

ROUNDS, SQUARES, FLATS, ANGLES AND SPECIAL SECTIONS FOR AGRICULTURAL IMPLEMENTS

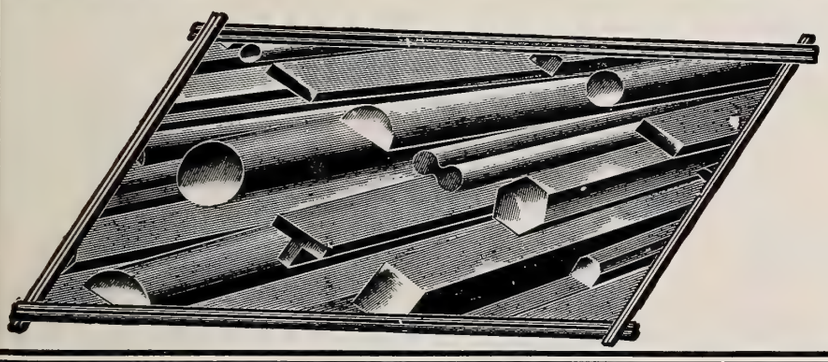
Prompt Shipment from Stock

BURLINGTON STEEL CO., Ltd.

HAMILTON - CANADA

UNION DRAWN STEEL CO., Limited

HAMILTON, ONTARIO



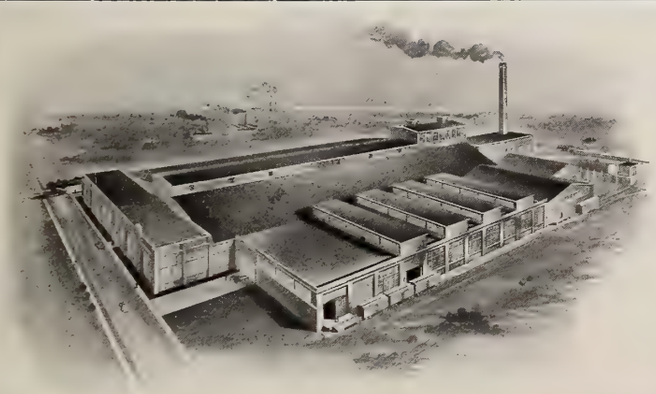
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The Canadian Drawn Steel Co., Ltd.

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Reed Organs, Piano Stools,
Music Cabinets.

Catalogue B.

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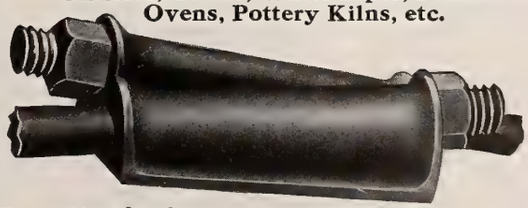
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Closet Seats,
Flush Tanks,
Medicine Cabinets,
Everything for the Bathroom.

Write for Catalogue C and Price List.

LUGS FOR BANDS

On Silos, Tanks, Water Pipes, Penstocks
Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods $\frac{5}{8}$ to $1\frac{1}{2}$ inch — Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

OTTERVILLE MFG. CO., LIMITED

OTTERVILLE, ONT.

orders for the ships which the company now has on hand, leaving it free to give all its attention to the building of the four wooden steamers for which it has been given contracts by the Imperial Munitions Board.

NEW BRUNSWICK.

St. John.

The St. John Shipbuilding Company have engaged J. L. Smith, of Montreal, as engineer to lay out yard and make plans for erection of shipbuilding plant.

NOVA SCOTIA.

Dartmouth.

It is likely that a shipbuilding plant will be established here in the near future. At a recent meeting of the Town Council and the Board of Trade an appropriation of $200,000 was voted to any responsible firm who would undertake the building of such a plant.

New Glasgow.

Plans are being prepared for shipyard at Old Mill wharf for Walter and Charles McNeil.

Sydney.

It is reported here that the Imperial Munitions Board are asking the Dominion Steel Corporation for a monthly output of at least 140,000 blanks, which will mean a large increase, since 17,000 was the average output for previous months.

ONTARIO.

Cardinal.

The Canadian Starch Company, 164 St. James St., Montreal, will make a $30,000 addition to their factory.

Copper Cliff.

The Canadian Copper Corporation will increase its capital stock to $10,000,000. The new capital will be used to develop the property and will include the erection of a 3,000-ton mill.

Elmira.

The Great West Felt Company will build a factory here to cost $5,000.

The Colonial Knitting Company have awarded contract for their knitting mill.

Goderich.

The Goderich Manufacturing Company will rebuild their factory shortly which was destroyed by fire at a loss of $90,000.

Hamilton.

The American Can Company will make an addition to their factory costing $125,000.

The Acme Stamping & Tool Company are building an addition to their factory on Sidney Street.

Canadian Fasteners, Limited, have awarded contract for a $20,000 factory building.

F. W. Fearman & Company have awarded contract for a cold storage plant.

General contract has been let on a $5,000 addition to the plant of the Evel Casket Company.

NEPONSET
BUILT-UP ROOF

Roofs These Factories——

Neponset Built-up Roof, laid according to our Standard Specifications, is now in service on the following factories:—

CANADIAN CROCKER WHEELER CO. - St. Catharines, Ont.
CANADIAN COPPER CO. - - Creighton Mines, Ont.
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DOMINION SUGAR CO. - - - - Chatham, Ont.
CANADIAN WESTINGHOUSE CO. - - - Hamilton, Ont.
DONNACONA PAPER CO. - - - - Donnacona, Que.
WM. WRIGLEY CO., JR. - - - - - Toronto, Ont.

This roof meets every requirement of the Canadian climate for use on Pitch and Sawtooth Roofs, as well as on flat, and other types of roofs.

Correspondence is invited regarding your particular requirements.

Bird & Son, Dept. I., Hamilton, Ont.

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A full line of Roofing Materials is made under the above trademark, all covered by our absolute guarantee.

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Neponset Twin Shingles
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The largest manufacturers of Roofings, Wall Board, and Roofing Felts in Canada.

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BUTTERFIELD TAPS



You can lose a lot of money and waste a lot of expensive time by getting poor taps on good machines.

On the other hand, every Butterfield Tap you buy will return you full value for the money invested —value in fast work, in accuracy and in long service.

Considering this, it's really no wonder so many shell-making plants prefer the Butterfield, for, in exacting work, their superiority is proved beyond all question.

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Rock Island, Que.

SAWS FOR SHELLS

We have experimented on the

SPECIAL SHELL STEEL

and have produced a HACK SAW BLADE that will give unequalled service on this material in HIGH-SPEED MACHINES

Possibly we could help you.

"Victor Blade— Canadian-Made"

VICTOR SAW WORKS, LTD.
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VICTOR HACK SAWS

COTTON & WOOL WASTE

PACKED AT OUR

DOMINION WASTE FACTORY
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THE GUARANTEE WITH OUR

Washed Cotton Wipers

All wipers have been hand selected, hard and starchy parts and buttons, etc., removed, sleeves and other closed parts opened and subjected to a thorough washing, rendering absolutely sanitary.

Write us for prices on our brands

SELECT WHITE MIXED COLORED DARK COLORED

SCYTHES & COMPANY, LIMITED
Manufacturers and Jobbers, Toronto, Montreal

WASHED COTTON WIPERS



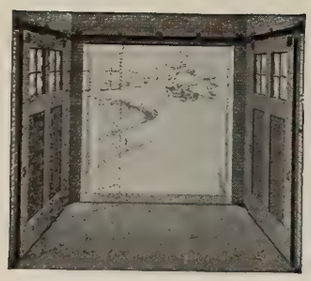
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It is a Tin Base Metal guaranteed to contain **no lead.**
We recommend it for its

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It will reduce your babbitt expense. Try it.

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Garage Door Hardware of all kinds for any purpose



Fire Door Hardware—All Styles with Underwriters' Label



CARRIER SYSTEMS
I-Beam or Trolley

Save Money on Your Factory Transportation



BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

Richards-Wilcox
CANADIAN COMPANY, LTD
LONDON, ONTARIO.



"R-W" Trolleys are best for all sliding doors

London.

Electrical contract has been let in connection with a $40,000 foundry for Beatty Bros., St. George Street, Fergus.

The Battle Creek Toasted Cornflakes Co., Limited, has awarded contract for a $75,000 addition to their mill and factory.

Tenders are being received by the London Art Woodwork Co., Limited, for factory and boiler house, to cost $15,000.

Markham.

Canada Cereal Company will call tenders about March 15th, 1918, for proposed flour mill.

Niagara Falls.

Work is progressing satisfactorily on the new factory for the Herbert Morris Crane and Hoist Company, of Toronto.

Oakville.

The Oak Tire & Rubber Company will erect a factory. Managing Director, Frank Low.

Ojibway.

Plans for the erection of the United States Steel Corporation's $20,000,000 plant will now be proceeded with, according to the statement of Mr. Ward B. Perley, Vice-President and General Manager of the Canadian Steel Corporation, the Canadian subsidiary of the United States concern. This company was incorporated about three years ago, and a tract of land on the St. Clair River, north of Windsor, was purchased, where a separate municipality was established and streets laid out for an ideal town such as the United States corporation has at its American plant. The war temporarily halted the undertaking, but the invita-



DOMINION ABRASIVE WHEEL CO. LTD.

MIMICO, ONT.

A new, thoroughly up-to-date plant for producing EXOLITE and CARBOLOX grinding wheels, for any purpose, by either the vitrified or silicate process.

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IMPERIAL GENUINE BABBITT METAL *The Highest Grade Manufactured*



Made specially for all HIGH SPEED, HEAVY ENGINES and EXTRAORDINARY HARD WORK

Manufactured and guaranteed to give excellent service by

THE CANADA METAL COMPANY, Limited, FRASER AVENUE TORONTO, Hamilton, Montreal Winnipeg, Vancouver

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Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
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Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

Write for catalogue and sample. Give inside dimensions and weight of contents.

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Sheet, Ingot, Rod, Wire, Tubing, Rivets, Extruded Shapes, Bronze Powder and Fabricated articles.

We solicit your enquiries and will be glad to serve you. Our experience and knowledge of the metal will be of value to you.

Write Us

NORTHERN ALUMINUM CO., LIMITED

tion of tenders for the construction of a slip and concrete docks at Ojibway foreshadows further operations. The establishment of this new concern, with its powerful financial backing, will probably create keen competition in the Canadian steel industry.

Ontario, Province of.

The Beaver Abitibi Timber Company, Limited, Beaver Road, Buffalo, N.Y., have purchased from the Frederickhouse and Abitibi Timber Company, the limit secured from the Ontario Government, and work will be started at once on construction of camp and rossing plant. New station will also be built at the junction of the Frederickhouse River and National Transcontinental Railway, where sawmill, etc., will be built.

Owen Sound.

At the regular meeting the town council unanimously endorsed the new steel industry by-law after several amendments had been proposed.

Peterboro.

A by-law granting a fixed assessment of municipal and business taxes to B. F. Ackerman, Son & Company, was carried. A shoe factory will be established by the company.

E. G. Patterson, general superintendent of the Canadian General Electric Co., states that contracts have been let for a two storey addition to the present office building, the tearing down of the present Dip and Buff shop and replacing it with a larger one—an addition to and putting in better shape of the present porcelain works and other general improvements around the factory. Altogether a considerable amount of money will be spent and labor employed during the operation of the work.

633-661 EASTERN AVENUE



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The Largest Patent Leather Manufacturers in the British Empire

A. R. CLARKE & CO., LIMITED

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Cut of 60-inch "Extra" Double Belt
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CARD CLOTHING
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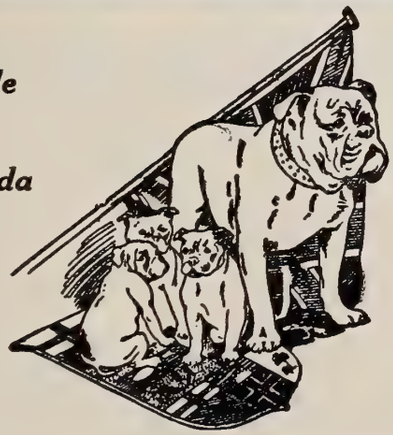
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From British Stock

"GENUINE OAK"
LEATHER BELTING
"D.K."
BALATA BELTING
Guaranteed to Give Satisfaction

D. K. McLAREN LIMITED
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Engineer's Supply Co., 123 Bannatyne Ave. E., WINNIPEG

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Made in Canada

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SUPERIOR QUALITY LEATHER BELTING AND LACE LEATHER

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FLECK BROS., Limited
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Vancouver, B.C.

Petrolea.

Mr. Kirkpatrick, care of owners, Colonial Knitting Company, Elmira, has the general contract for $10,000 factory.

Sarnia.

The preliminary work of laying out the sites for the new $200,000 industry to be located in this city has commenced. The new plant, which is being fostered by Senator Lyman Holmes, President of the Romeo Foundry Company, Port Huron, will manufacture automobile parts and castings. It is expected that excavation work will commence at an early date, when the details and negotiations will be finally arranged. The Grand Trunk Railway Company will lay a switch through the centre of the property, according to present plans. Four buildings, 90 feet by 200 feet, will be erected, and 150 men will be employed at the outset.

The Mueller Mfg. Company of this city may erect a $400,000 plant at Port Huron.

Sault Ste. Marie.

The Algoma Steel Corporation is erecting another blast furnace, which when completed will have a capacity of 400 tons of pig iron per day. The furnace will be finished by the New Year. The company recently completed its latest open-hearth furnace at the "Soo" plant, with a capacity of 75 tons per hearth, or about 200 tons per day, and makes the tenth open hearth furnace which the company has in operation, as well as the duplex furnace which has been most satisfactory.

PAPER SITUATION

Let us give you ten reasons why prices will advance.

No doubt your stock of everything in Paper and Stationery is at a minimum, for there has been a general feeling that prices would drop. However, we have studied the situation very carefully and arrived at the conclusion that with all raw materials advancing right along—Wood costing nearly $20.00 per cord against $4.00 as in pre-war days and wages advanced 50%—there are certain to be further large advances. Be wise and take advantage of our large stocks or favor us with your enquiries. We are agents for American Mills making all Papers such as, Genuine Parchment, Glassine, Filter and Insulating Papers, formerly made in Germany, also we are Pioneers of Canadian-made Kraft Wrappings, the most economical wrapper. Get particulars of Waterproof Papers and our Tufenuf Twine Reinforced Waterproof Paper, which replaces Burlap for all purposes to advantage; Barrel Heads, Heavy Bags, Brattice Cloth for mines, etc.

Mill Supply Dept.: Boiler Preservatives, Linings, Vul. Fibre.

BEVERIDGE PAPER CO., Limited ***Pulp and Paper Mill Agents*** **Montreal**

H. & D. Corrugated and Solid Fibre Board



CONTAINERS will save on your transportation charges, save your floor space, cut down packing expenses, and give you positive protection against loss from damage and pilfering. Write for prices and samples.

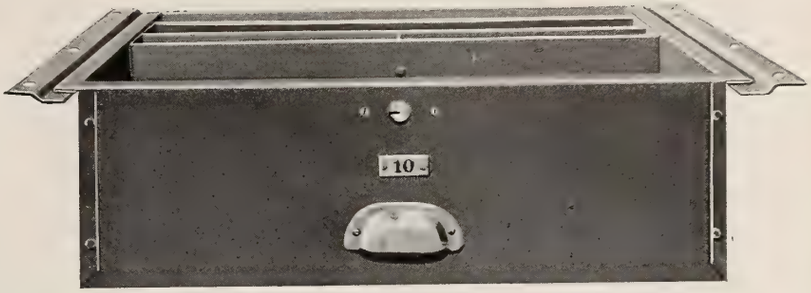
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STEEL STOOLS

Our stools have wood seats firmly riveted to the steel frame. 20, 22, 24, 26 inches high, may be fitted with backs if so desired.



TOOL DRAWERS

These drawers do not warp and bind like those made of wood. Each one is provided with a high-class lock and the locks are masterkeyed. Your mechanics' tools will be safe in "MEADOWS" Tool Drawers.

The Geo. B. Meadows, Toronto Wire, Iron & Brass Works Co., Ltd.
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If you enjoy dealing with people that are "White," human, and wide-awake, try the new management of the

Rudd Paper Box Co., LIMITED

372-376 Richmond St. West

TORONTO, - - CANADA

Tillsonburg.

Work has been started on the large extension to the Maple Leaf Harvest Tool Company's plant on Tillson Ave. When the extensions are completed, the local plant will be the largest of its kind in Canada. The main building will have a frontage of 330 feet on Tillson Ave.

Toronto.

The Dominion Wheel and Foundries, 131 Eastern Avenue, have had plans drawn for a $5,000 machine shop. Work will start at once.

Trenton.

It is reported that at least twenty new houses are required for the heads of departments of the new British chemical plant now being erected in this town. This fact has been brought to the attention of the Town Council and Board of Trade, and it was stated that, unless accommodation was provided, the officials would have to seek homes elsewhere, probably in Belleville.

Walkerville.

The Kerr Engine Company, Limited, of Walkerville, Ont., the valve manufacturers, have leased the iron foundry department of their plant to the Standard Foundry & Supply Company, who will hereafter supply the firm with all their grey iron castings in connection with their valve and hydrant business. The Standard Foundry Company, in addition to supplying the Kerr Engine Company with their castings, will engage extensively in general jobbing work.

Welland.

Fire caused $3,500 damage to the plant of the Welland Machine & Foundries, Limited, last Sunday.

West Lorne.

Bernard C. Weisbrood contemplates textile factory costing $10,000.

Woodstock.

Notice has been given of the winding up of the Woodstock Concrete Machinery Co., Limited, and the appointing of a liquidator.

The Canadian Linderman Company has rented the Tobin Arms Factory, and will instal machinery at once and put the factory in operation, working day and night on the order which the company has received for $14,000,000 worth of munitions for the United States Government. The Linderman people have their head office and factories in Muskegon, Mich.

QUEBEC.

Chambly Canton.

Elevator contract has been let for the $250,000 plant for the Canadian Leatherboard Company.

Granby.

The Miner Rubber Company contemplate the erection of a $3,000 power house.

Lachine.

Contracts have been awarded in connection with the erection of a $35,000 one-storey brick factory addition for the Dominion Wire Rope Company.

The Dominion Bridge Company are equipping a portion of their plant for the manufacture of marine engines and boilers.

CHEMICALS

ACIDS
All Strengths
Sulphuric, Muriatic, Nitric — Commercial and Chemically Pure
Mixed
Acetic

Glauber Salt
Aqua Ammonia Commercial or C.P.
Anhydrous Ammonia
Salt Cake
Soldering Flux
Tinning Flux
Zinc Chloride
Ammonia Chloride (Sal Ammoniac)
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Phosphate of Soda
Copperas (Crystal and Sugar)
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Sulphate of Alumina
Tri-Sodium Phosphate
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Logwood 51' for cotton
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For Tree Spraying

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Acetic Acid Refined
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Acetic Anhydride
Acetate of Soda
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Charcoal
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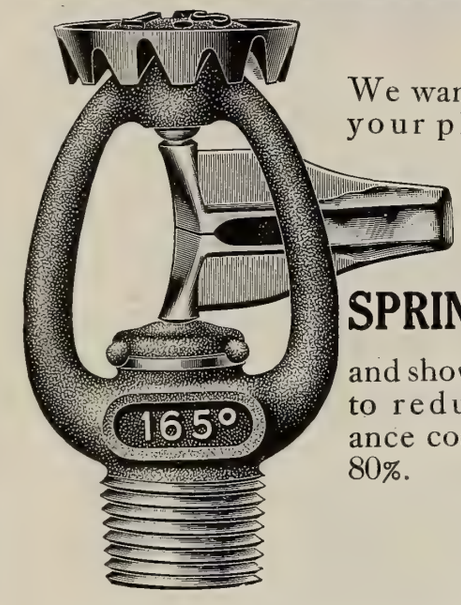
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ESTY FIRE SPRINKLERS

and show you how to reduce insurance costs 50% to 80%.

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Maisonneuve.

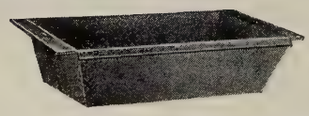
Contracts have been let in connection with a $20,000 shoe factory for the Lida Shoe Company, 899a La Salle Ave.

Tenders will be called for the erection of a factory to cost $150,000 for the Tetrault Shoe Mfg. Company, 331 Demontigny St. E.

Montreal.

Work is progressing on the concrete vessel which the Atlas Construction Company has undertaken to build for a Montreal syndicate. The steel reinforcing ribs are placed 27 inches apart and are 5 inches wide at the top and 14 inches at the bottom. The ship will be 126 feet 10 inches long, 22 feet 6 inches moulded breadth, and 12 feet 6 inches

STEEL FACTORY EQUIPMENT



Steel Shop Boxes, Foundry Boxes, Shelf Boxes, Shop Barrels, Stools, Oily Waste Cans, Garbage Cans.

Gasoline Tanks and Pumps, Pressure Tanks, Storage Tanks, Smoke Stacks.

Anything in Black or Galvanized Sheet Metal up to $\frac{1}{8}$ thickness. Send blue print or rough drawing and get our prices.

Sheet Steel Sundries for manufacturers is one of our specialties.

Write us

The Steel Trough and Machine Co. Limited

TWEED, ONT., CANADA





POWER PRESSES

DROP AND SCREW

SHEET METAL STAMPINGS

DIES AND TOOLS

W. H. BANFIELD & SONS

LIMITED

370-386 PAPE AVE. TORONTO

ANNOUNCEMENT

The Business of

The General Fire Equipment Co., Limited,

was taken over on June 15th by

The Bennett & Wright Co.,
Limited

72 Queen St. East - Toronto

and will hereafter be known as their

FIRE PROTECTION DEPARTMENT

THE BENNETT & WRIGHT CO., Limited, will continue to use, in their installations, the

Manufacturers' Automatic Sprinklers

"The Head that Stood the Test"

The business of The General Fire Equipment Co., Limited, was conducted largely under the same management as THE BENNETT & WRIGHT CO., Limited, and we wish to assure our customers that their requirements will continue to receive prompt and careful attention.

The General Fire Equipment Co., Limited.

Wood Tanks and Vats

All sizes and styles.

Made from selected Tank Stock.

Towers and Tanks for sprinkler and water supply, etc.



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BRANTFORD - ONTARIO

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SPRINKLER TANKS and TOWERS

also wood and steel tanks for Municipal, Railway and Suburban water supply.

All our tanks and towers are built to pass inspection of any Board of Fire Underwriters.

Send for special tank and tower catalogue.

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We do all kinds of hot and electro galvanizing for the trade. Our plant is one of the largest in Canada and our charges reasonable.

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Ontario Wind Engine & Pump Co., Limited

TORONTO MONTREAL WINNIPEG CALGARY



Canadian
CHICAGO BRIDGE & IRON COMPANY
Limited
Bridgeburg, Ontario

ELEVATED STEEL TANKS AND STANDPIPES

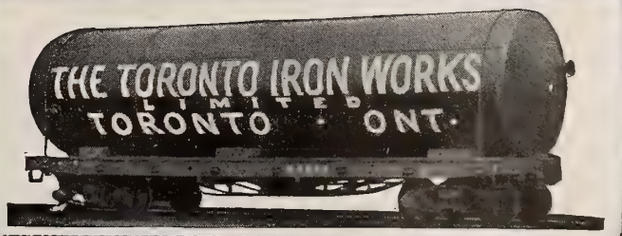
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OIL STORAGE - GASOLINE TANKS - AIR RECEIVERS
PNEUMATIC WATER SUPPLY TANKS - SMOKE STACKS
BOILER BREECHING - RIVETED STEEL PIPE - BINS & HOPPERS

Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

moulded depth. It will be a single screw ship, capable of making from eight to ten knots, and will be used on the lakes at first and on the ocean perhaps later. There will be five keels running the full length of the ship, 29 inches deep.

Canadian Vickers, Limited, have let the contract for a $48,000 factory.

Plans are being prepared for the erection of a factory addition for A. R. Whittall Canadian Co., Limited, 740 Mullins Street.

Extensive improvements have been completed at the plants of the Canada Box Board Company in Montreal and Frankford, Ont. The capacity of the mill in Montreal has been increased to thirty-three tons a day, while at Frankford the output has been enlarged to fifty tons daily.

The Canadian Vickers, Limited, have taken out a permit for the construction of a reinforced concrete warehouse, 159 by 67 feet, to cost $48,000.

Rigaud.

It is understood that Curtis & Harvey will not rebuild their plant at Dragon near here.

Shawinigan Falls.

The Canadian Aloxite Company, a subsidiary of the Carborundum Company, Niagara Falls, has completed the level of their mill site and is actually completing the foundations of three large buildings.

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Auckland, Wellington, Lyttelton and Dunedin (New Zealand) and Melbourne and Sydney (Australia). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

The New Zealand Shipping Co.

LIMITED

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Shipments Handled to All Parts of the World

Ask our rates.
A trial shipment will demonstrate the facilities we possess for giving COMPLETE SATISFACTION.

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CANADIAN PACIFIC

THE FINEST HUNTING GROUNDS IN AMERICA

ARE CONVENIENTLY REACHED

Via

Canadian Pacific Railway

MOOSE--BEAR--CARIBOU

RED DEER AND SMALL GAME

ARE QUITE PLENTIFUL

PARTICULARS FROM CANADIAN PACIFIC TICKET AGENTS
OR W. B. HOWARD, DISTRICT PASSENGER AGENT, TORONTO

THE
MONTREAL COTTONS
LIMITED

MANUFACTURERS OF

WHITE VICTORIA LAWNS

WHITE NAINSOOKS

and

DYED COTTONS

OF EVERY DESCRIPTION

Sherbrooke.

It is understood that the firm of MacKinnon, Holmes & Co., Limited, have recently received from the Imperial authorities a large order for marine work which will keep their plant in operation for many months to come.

Three Rivers.

The Three Rivers Shipyard Company will erect a machine shop costing $15,000.

The city has decided to guarantee to L. H. Bacque, bonds for an amount of $50,000, on the condition that he builds a brick factory here.

Yamaska River.

The Miner Rubber Company, Granby, contemplate the erection of a $3,000 power house.

SASKATCHEWAN.

Regina.

The Canadian Nu-Fuel Company has been recently formed here to manufacture a high-grade fuel out of garbage and waste rags, etc. The process of manufacture is the secret of Edgar L. Culver of Chicago, who has been manufacturing fuel at Austin and San Antonio, Texas.

In order to save for the Indians of Canada their large timber holdings against loss by forest fires, the Indian Department at Ottawa is obliging licensees to pile and burn their "slash" after taking the logs out of the woods. The precaution will save numerous bad fires.

Penmans

Underwear, Hosiery and Sweaters
Laundry, Pulp and Papermakers' Felts, Blankets
Lumbermen's Socks, etc.

Factories at
PARIS, THOROLD, PORT DOVER, ALMONTE AND BRANTFORD, ONTARIO
ST. HYACINTHE AND COATICOOK, QUEBEC

Penmans LIMITED

PARIS : : : CANADA

Ship it Canadian Northern all the way

MR. MANUFACTURER

The next time you have a shipment that could be handled by the Canadian Northern Railway to destination—Test the Service.

Our lines are operating from Quebec to the Pacific Coast. They serve most of the great centres of industry and population, and traverse the great producing areas. Your shipper will tell you of the many points that may be reached over the Canadian Northern Railway.

So, next time you have a consignment of goods going out give the C.N.R. an opportunity to handle it for you. The service should satisfy.

TEST CANADIAN NORTHERN RAILWAY SERVICE

Principal Agencies: Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



HIGH-PRICED COAL SCRAPS OLD PLANTS.

Modern Steam Power Plants Are Three Times More Efficient Than Older Types.

We are possibly just as wasteful of coal as is the United States, where, according to V. H. Manning, Director of the United States Bureau of Mines, fully $500,000,000 were wasted last year, through inefficiency in use. Notwithstanding the higher efficiency rendered possible by the constant improvement of modern power equipment, the waste is increasing and the higher price of the commodity is subjecting the country to a still heavier penalty. Every pound wasted is that much less available to put into energy to win the war.

In the modern, efficient power plants, 20 per cent. of the heat in the coal consumed is converted into power, whereas in small power stations the efficiency frequently drops below 10 per cent. It is quite probable that, on the average, only about 5 or 6 per cent. of the energy of the coal is transformed into useful energy ready for distribution. Were it possible to increase the average efficiency to something near the maximum now attainable, about three times as much energy would be available for the productive industries of the country. The increasing price of coal is causing many old, inefficient steam power plants to be replaced by modern ones that convert a higher percentage of the fuel consumed into power.—*L.G.D.*

More than two-thirds of the technical foresters in Canada in 1914 have seen military service at the front. The enlistment of the forest rangers has likewise been heavy.

JULIUS COHEN & JOSEPHY

Foreign Domestic WOOL *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO
Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative 13 Church St., Toronto

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HOTEL AND INSTITUTION KITCHEN APPLIANCES

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Coal and Wood
FURNACES

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STEEL AND CAST RANGES

Coal, Gas, Wood and Oil
HEATERS

ENAMELWARE, TINWARE AND OTHER KITCHEN WARE

LONDON TORONTO MONTREAL WINNIPEG VANCOUVER McClary's ST. JOHN, N.B. HAMILTON CALGARY SASKATOON EDMONTON

BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles which will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates of Insertion in this Department write to the Advertising Manager of "Industrial Canada," Toronto

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ABRASIVES
*D. A. Brebner, Ltd., Toronto.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economiq Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton. Ont.

AIR DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Eureka Mineral Wool & Asbestos Co., Toronto.

AUTOGRAPHIC REGISTERS
*Autographic Register Co., Ltd., Montreal.

AUTOGRAPHIC REGISTER SYSTEMS
Business Systems, Ltd., Toronto.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton. Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville. Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*Dominion Metal Co., Ltd., Sherbrooke, P.Q.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

BAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt. Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chains
*Canadian Link-Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BELTING, elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, stitched cotton duck
*Dominion Belting Co., Ltd., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

BOARDS, wood, binder, fibre specialties
*Beveridge Paper Co., Limited, Montreal.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada. Ltd., Toronto.

BOXES, steel shop
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS AND BRONZE WIRE
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

*For Display Advertisement see Index, Page 785



By Royal Warrant

"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

Distilled and Bottled by

HIRAM WALKER & SONS
LIMITED

Walkerville, Canada

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MEXICO CITY VICTORIA, B.C. WINNIPEG

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS GOODS
*Penberthy Injector Co., Ltd., Windsor.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Wakerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*McGregor & McIntyre, Ltd., Toronto.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.
Toronto.

BUILDING FELT and PAPER
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABLES, electric light, power, telephone and telegraph
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, iron, lead and putty
A. R. Whittall Can. Co., Ltd., Montreal.

CANS, ROVING, ETC., fibre
*Beveridge Paper Co., Limited, Montreal.

CANS, tin
A. R. Whittall Can. Co., Ltd., Montreal.
American Can Co., Montreal and Hamilton.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co. of Canada, Ltd. Works, Welland, Ont. Head Office, Toronto.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Co., Montreal.

CARD RECORD SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
Hammant Steel Car and Engineering Works, Hamilton.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
*Hull Iron and Steel Foundry, Ltd., Hull, P.Q.

CATALOGUE MAKERS
Grip, Ltd., Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CEMENT, HIGH TEMPERATURE
*Beveridge Paper Co., Ltd., Montreal.

CHAINS, for elevators, conveyors and drives
*Canadian Link-Belt Co., Toronto.

CHAIRS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHAIR SEATS, fibre
*Beveridge Paper Co., Limited, Montreal.

CHEMICALS
*Cosmos Chemical Co., Port Hope.
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CIRCULAR SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COAL CUTTERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS, shaft
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.
Rolph & Clark, Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, PAINTS, ETC.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.

CONDUITS, fibre tubing
*Beveridge Paper Co., Limited, Montreal.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTAINER BOARD—strong container
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

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COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinde & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORUNDUM, artificial
*D. A. Brebner, Ltd., Toronto.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAM SEPARATORS
The Renfrew Machinery Co., Ltd., Renfrew, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DESKS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRIFT BOLT DRIVERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILL SHARPENERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRILLS, core
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd. Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRIC APPLIANCES, fibre, all purposes
*Beveridge Paper Co., Limited, Montreal.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Hamilton Motor Works Ltd., Hamilton.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton Ont.
Rolph & Clark, Limited, Toronto

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited, Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.

FANS
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, pulp and paper makers
Ayers Limited, Lachute Mills, P.Q.
*Beveridge Paper Co., Limited Montreal.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FIBRE, VULCANIZED, hard and flexible
*Beveridge Paper Co., Limited, Montreal.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FILING CABINETS
*Office Specialty Co., Newmarket, Ont.

FILING EQUIPMENT, wood & steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

FILING SYSTEMS
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

FILTER PAPERS
*Beveridge Paper Co., Limited, Montreal.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE APPARATUS
*R. S. Bickle Co., Woodstock, Ont.

FIRE BRICK AND CEMENT
*Beveridge Paper Co., Ltd., Montreal.

FIRE BRICK, JOINTLESS
*Beveridge Paper Co., Ltd., Montreal.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

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FIRE ENGINES
*R. S. Bickle Co., Woodstock, Ont.
Waterous Engine Works Co., Limited, Brantford, Ont.
FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.
FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited. Toronto, Ont.
FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited. Brantford, Ont.
FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.
FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited. Toronto.
FIRE PROOF WINDOWS AND DOORS
*A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.
*Trussed Concrete Steel Co. of Canada. Limited. Walkerville, Ont.
FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited. Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.
FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.
FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.
FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.
FITTINGS, steam
Warden King, Ltd., Montreal, Que.
FLAGS
*Scythes & Co., Limited, Toronto.
FLASHLIGHTS
Canadian Carbon Co., Toronto.
FLEXIBLE COUPLINGS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.
FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.
FORGES
*Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
*Sheldons, Limited, Galt, Ont.
FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.
FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.
FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.
FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.
FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.
FUEL
Standard Fuel Co., Toronto.
FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.
FUR GOODS
John W. Peak & Co., Limited. Montreal, Que.
FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.
FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.
FURNACES, hot air
Bedford Stove Co., Bedford, Que.
FURNACES, oil burning
*Mechanical Engineering Works, Montreal, Que.
FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.
FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.
FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.
FUSES
*Economy Fuse and Mfg. Co., Montreal.
GALVANIZED IRON
*A. C. Leslie & Co., Montreal.
GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.
GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.
GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.
GASOLINE, storage systems
*Steel Trough and Machine Co., Ltd., Tweed, Ont.
GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.
GASOLINE
*The Imperial Oil Co., Limited, Toronto.
GAUGES
*Brown Engineering Corporation, Toronto.
GEARS, cut
*Brown Engineering Corporation, Toronto.
*Hamilton Gear & Machine, Toronto.
*Winnipeg Gear & Engineering Co., Ltd., Winnipeg.
GEARS, noiseless fibre, also reinforced
*Beveridge Paper Co., Limited, Montreal.
GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.
GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.
GLASSWARE, cut
Roden Bros., Ltd., Toronto.
GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.
GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.
GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.
GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.
GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit. Ltd., Toronto.
GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.
GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.
GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.
GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.
GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.
GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
GRINDER, bench
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
GRINDERS, portable
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.
GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.
GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.
GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.
GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.
GYPSUM, crushed
*Albert Mfg. Co., Hillsborough,N.B.
GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
HACK SAW BLADES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HACK SAW FRAMES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HACK SAW MACHINES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.
HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
HAND SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HANGERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt. Ont.
HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.
HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.
HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.
HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.
HARNESS
Lamontagne Ltd., Montreal, Que.
HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.
HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.
HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.
HEADING SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.
HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.
*The Canadian Blower & Forge Co., Limited, Kitchener, Ont.
HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.
HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.
HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOISTS, electric and pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOISTING MACHINERY
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd., Toronto.
HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.
HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
HYDRAULIC PRESSES
*Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.
ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.
ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.
INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.
INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.
INSERTED TOOTH SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
INSULATING PAPER AND FIBRE
*Beveridge Paper Co., Limited, Montreal.
INTERLOCKING RUBBER TILING
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.
INVERTS
Standard Clay Products, Ltd., St. Johns, Que.
IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.
IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*McGregor & McIntyre, Ltd., Toronto.
IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.
IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.
IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

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JAM, canned goods, etc.
E. D. Smith & Son, Limited.
JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.
JIGS AND TOOLS
*Brown Engineering Corporation, Toronto.
JOINTERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.
JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.
JEWELRY, gold-filled
Caron Bros., Montreal, Que.
JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
JUNCTION BOXES, cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.
KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.
KILNS
*Sheldons, Limited, Galt, Ont.
KINDLING
Standard Fuel Co., Toronto.
KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.
KNITTED GOODS
*Penman's, Limited, Paris, Ont.
KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.
KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.
KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.
LABELS
Lawson & Jones, Ltd., London, Ont.
LABELS, lithographed
Harris Lithographing Co., Toronto.
LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.
LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.
LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.
LAGER
E. L. Drewry, Winnipeg, Man.
LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.
LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.
LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.
LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.
LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.
LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.
LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.
LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.
LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.
LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.
LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.
LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.
LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.
LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.
LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.
LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.
LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.
LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.
LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.
LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.
LINK BELT, Ewart, and sawmill riveted
*Canadian Link-Belt Co., Toronto.
LINK BELTING
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.
LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.
LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.
LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
Rolph & Clark, Limited, Toronto.
LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.
LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.
LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.
LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.
LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.
LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.
LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.
LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.
LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.
LUMBER
*Brown Corporation, La Tuque, Que.
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.
LUMBER, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
LUMBER, spruce and pine, cedar railway ties and shingles
Bathurst Lumber Co., Ltd., Bathurst, N.B.
LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.
LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.
LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.
MACHINE KNIVES
*E. C. Atkins & Co., Inc., Hamilton, Ont.
MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, conveying
*Canadian Link-Belt Co., Toronto.
*Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.
MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.
MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.
MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, railroad and car shop
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*John Bertram & Sons Co., Ltd., Dundas, Ont.
MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.
MACHINERY, special
Bawden Machine Co., Limited, Toronto.
MACHINERY, tannery
W. P. Plant, Hastings, Ont.
MACHINERY, transmission
*Canadian Bond Hanger and Coupling Co., Ltd., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.
MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.
MACHINES, painting
Spramotor Co., London, Ont.
MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.
MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.
MAPLE PRODUCTS
*Maples, Limited, Toronto.
MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.
MATCHERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
MATCHES
*The E. B. Eddy Co., Ltd., Hull.
MECHANICAL STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.
MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.
METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.
METAL CEILING
*The Pedlar People Limited, Oshawa.
METAL LATH
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
*The Pedlar People Limited, Oshawa.
METAL PACKING
*Garlock Packing Company, Hamilton, Ont.
METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.
METAL SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.
METAL SHINGLES
*The Pedlar People Limited, Oshawa.
MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.
MILLBOARD, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.
MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.
MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.
MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.
MORTISERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.
MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.
MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.
MOTORS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
MOTOR TRUCKS
*Menard Motor Truck Co., Ltd., Windsor, Ont.
MOULDERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.
NAPHTHA
*The Imperial Oil Co., Limited, Toronto.
NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.
NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

*For Display Advertisement see Index, Page 785

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.
OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.
OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.
OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.
OFFICE FURNITURE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.
OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.
OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.
OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.
OIL COMPANIES
*Canadian Oil Cos., Toronto.
Commercial Oil Co., Ltd., Hamilton, Ont.
*Imperial Oil Co., Toronto.
OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.
OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.
OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.
ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.
ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.
ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*McGregor & McIntyre, Ltd., Toronto.
OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.
OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.
OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.
OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.
*The Prest-O-Lite Co., Inc., Toronto.
OXYGEN
*L'Air Liquide Society, Montreal.
PACKERS, parchment papers, discs, shavings
*Beveridge Paper Co., Limited, Montreal.
PACKING BOXES
Barchard & Co., Limited, Toronto.
PACKING, engine
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Co., Hamilton.
PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.
PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.
PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.
PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.
PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
PAPER BAGS
*Beveridge Paper Co., Limited, Montreal.
PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.
PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.
PAPER, coated, book and label
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, coated box board
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, coated cover
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, enamelled blotting
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.
PAPER, kraft and all wrappings, printings and specialities
*Beveridge Paper Co., Limited, Montreal.
PAPER, label
*Provincial Paper Mills, Limited, Georgetown, Ont.
PAPER, ledger
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.
PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, wall
Stauntons, Ltd., Toronto.
PAPER, Waxed
Business Systems, Ltd., Toronto.
PAPER, wrapping, printing and specialties
*Beveridge Paper Co., Ltd., Montreal.
*The Riordon Pulp and Paper Co., Montreal, Que.
PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.
PAPER, writing, high-grade
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Limited, Montreal, Que.
PAPERS, bond
*Howard Smith Paper Mills, Ltd., Montreal.
*Rolland Paper Co., Ltd., Montreal, Que.
PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.
PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.
PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.
PATENT LITIGATION
Ridout and Maybee, Toronto.
PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.
PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.
PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.
PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.
PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.
PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.
PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.
PIANO KEYS
The Otto Higel Co., Ltd., Toronto.
PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIANO, player actions
The Otto Higel Co., Ltd., Toronto.
PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.
PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.
PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.
PINS, society, emblems and badges
Caron Bros., Montreal, Que.
PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.
PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.
PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.
PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.
PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.
*The Pedlar People Limited, Oshawa.
PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.
PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.
PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.
PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.
PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.
PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
PLANERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
PLANING MILLS
G. & J. Esplen, Montreal, Que.
PLASTERING TROWELS
E. C. Atkins & Co., Inc., Hamilton, Ont.
PLOWS
J. Fleury's Sons, Aurora, Ont.
PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.
PLUMBING SUPPLIES
Toronto Plate Glass Importing Co. Limited, Toronto.
PNEUMATIC DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.
POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.
PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.
POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.
POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.
POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.
POWER PRESSES
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRESERVATIVE PAINT
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.
PRESERVATIVE PAINT FOR BOILERS
*Beveridge Paper Co., Limited, Montreal.
PRESSES, baling and filter
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRESSES, hydraulic
Hydraulic Machinery Co., Limited, Montreal.
PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.
PRESSES, veneer
Hydraulic Machinery Co., Limited, Montreal.
*William R. Perrin, Ltd., Toronto.
PRINTERS
Rous & Mann, Ltd., Toronto.
PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.
PULLEYS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.
PULP, sulphate and sulphite
Bathurst Lumber Co., Ltd., Bathurst, N.B.
PULP
*Brown Corporation, La Tuque, Que.
PUMPS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

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PUMPS, boiler feed
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILS, light
Hammant Steel Car and Engineering Works, Hamilton.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT FOR CONCRETE
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

REINFORCEMENT FOR CONCRETE ROOFING, Metal.
*The Pedlar People Limited, Oshawa.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETERS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROCK DRILLS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

ROLL PRINTING
*Autographic Register Co., Ltd., Montreal.
Business Systems, Ltd., Toronto.

ROOFING, ready to lay
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SAND RAMMERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
*E. C. Atkins & Co., Ltd., Hamilton.
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, crosscut and band
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*The Pedlar People Limited, Oshawa.

SHEETS, galvanized
*Dominion Sheet Metal Co. Ltd., Hamilton.
*The Pedlar People Limited, Oshawa.

SHINGLES
Bathurst Lumber Co., Ltd., Bathurst, N.B.

SHINGLE SAWS
*E. C. Atkins & Co., Inc., Hamilton, Ont.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILENT CHAIN DRIVES
*Canadian Link-Belt Co., Toronto.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKATE SHARPENERS
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMELTER LINING
*Beveridge Paper Co., Ltd., Montreal.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SMOKE-STACKS
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRAL CONVEYORS
*Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Ltd., Guelph, Ont.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

*For Display Advertisement see Index, Page 785

SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKET WHEELS
*Canadian Link Belt Co., Ltd., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPINGS, METAL
*Russell Motor Car Co., Ltd., Toronto.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*McGregor & McIntyre, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL FILING EQUIPMENT
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STOOLS, steel factory
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

STONE
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES
Smith Foundry Co., Ltd., Fredericton, N.B.
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*Manitoba Bridge & Iron Works, Ltd., Winnipeg.
*McGregor & McIntyre, Ltd., Toronto.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SUPPLY DEALERS
*The Foundation Co., Limited, Montreal.

SURFACERS
*P. B. Yates Machine Co., Ltd., Hamilton, Ont.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.

TANKS, steel storage
*Steel Trough and Machine Co., Ltd., Tweed, Ont.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERMINALS, electric cable
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TIE TAMPERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

TILING, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, bicycle, auto, carriage, truck, motorcycle
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TOOLS, pneumatic
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

TRACK, steel, portable
Hammant Steel Car and Engineering Works, Hamilton.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSLATIONS INTO FRENCH
Raoul Renault, Quebec City.

TRANSMISSION MACHINERY
*Canadian Bond Hanger & Coupling Co., Alexandria, Ont.
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford

TRUCKS, fibre and reinforced
*Beveridge Paper Co., Limited, Montreal.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUCKS, steel, forge and foundry
Hammant Steel Car and Engineering Works, Hamilton.

TRUCKS FOR OFFICE AND VAULT USE
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

TUBING, Fibre
*Beveridge Paper Co., Limited Montreal.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto

TUMBLERS, foundry
*Northern Crane Works, Limited Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURPENTINE
*Brown Corporation, La Tuque, Que.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte Ont

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Dietrett, Ltd Toronto

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
*John Morrow Screw and Nut Co., Ltd., Ingersoll.
*Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
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UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Jenkins Bros., Ltd., Montreal.
*Kerr Engine Co, Ltd., Walkerville.
*Penberthy Injector Co., Ltd., Windsor.

VALVES, for steam and water
*Jenkins Bros., Ltd., Montreal.
*Penberthy Injector Co., Ltd., Windsor.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VALVES, rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
R. C. Jamieson & Co, Ltd., Montreal. Que.

VAULT FITTINGS, steel
*Office Specialty Mfg. Co., Ltd., Newmarket, Ont.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Pedlar People Limited, Oshawa.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que.

WASHERS
*The Steel Company of Canada, Limited. Hamilton.

WASHERS, fibre
*Beveridge Paper Co., Limited, Montreal.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont

WASTE PAPER BASKETS AND ALL RECEPTACLES, fibre
*Beveridge Paper Co., Limited, Montreal.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATERPROOF, cement coating
Benjamin Moore & Co, Ltd., Toronto
*Beveridge Paper Co., Limited, Montreal.
*Paterson Manufacturing Company, Toronto and Montreal.
*Trussed Concrete Steel Co. of Canada, Limited, Walkerville, Ont.

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont

*For Display Advertisement see Index, Page 785

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, fibre
*Beveridge Paper Co., Limited, Montreal.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia. Ont.

WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.
of Canada, Ltd., Hamilton, Ont.

WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont

WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES
Daly & Morin, Montreal, Que.

WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

WIRE CLOTH
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co.

WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
*Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

WIRE ROPE
*Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.

WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.

WOOD BORERS
*Canadian Ingersoll-Rand Co., Ltd., Sherbrooke, Que.

WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.

WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada. Ltd., Niagara Falls, Ont.

WRAPPERS, waterproof paper and twine reinforced
*Beveridge Paper Co., Limited, Montreal.

WROUGHT IRON PIPE
*The Steel Compony of Canada Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

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